INFORMATION ONLY

SPECIAL PROVISIONS

Routes 47 & US 40

From South of New Road to South of Marshall Mill Road and From West of Old Dutch Mill Road To East Of Elmwood Avenue Reconstruction & Structure Replacement Township of Franklin, Gloucester County

Contract No. 052970202
Federal Project No. MGS-AOOS(845)

AUTHORIZATION OF CONTRACT

The Contract for this Project is authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements thereto, and Title 23 of the United States Code - Highways.

SPECIFICATIONS TO BE USED

The 2001 Metric Standard Specifications for Road and Bridge Construction, of the New Jersey Department of Transportation as amended herein will govern the construction of this Project and the execution of the Contract.

These Special Provisions consist of the following:

Pages 1 to 80 inclusive for General, Road, and Bridge Provisions.

Required Contract Provisions, Federal-Aid Construction Contracts (Form FHWA-1273) pages 1 to 10 inclusive, revised April 1993.

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246), pages 1 to 5 inclusive, dated December 1980, revised April 1984.

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246), pages 1 and 2, dated December 1980, revised April 1984.

State of New Jersey Equal Employment Opportunity for Contracts Funded by FHWA, page 1, dated November 1978, revised April 1984.

Emerging Small Business Enterprise Utilization Attachment, FHWA Funded Contracts, pages 1 to 7 inclusive, dated March 2001.

Equal Employment Opportunity Special Provisions, pages 1 to 11 inclusive, dated February 1976, revised April 1984, November 22, 1988, and March 1998.

Special Contract Provisions for Investigating, Reporting, and Resolving Employment Discrimination and Sexual Harassment Complaints, pages 1 and 2 inclusive, dated January 1989.

Asbestos Abatement Specifications,, Pages 1 thru 35, dated September 2003

Conrail – Specific Requirements of Consolidated Rail Corporation for Work on its Right of Way, dated February 1, 1997.

General wage determinations issued under Davis-Bacon and related acts, published by US Department of Labor, may be obtained from the Davis-Bacon web site at http://www.access.gpo.gov/davisbacon/nj.html under the appropriate county, select the construction type heading: HIGHWAY.

The Contractor shall pay the minimum wage rates determined by the United States Secretary of Labor and the New Jersey Department of Labor. If the minimum wage rate prescribed for any craft by the United States Secretary of Labor is not the same as the minimum wage rate prescribed for that craft by the New Jersey Department of Labor, the higher rate shall be the rate paid.

State wage rates may be obtained from the New Jersey Department of Labor (Telephone: 609-292-2259) or by accessing the Department of Labor's web site at http://www.nj.gov/labor/lsse/lspubcon.html The State wage rates in effect at the time of award will be made a part of this Contract, pursuant to Chapter 150, Laws of 1963 (NJSA 34:11-56.25, *et seq.*).

In the event it is found that any employee of the Contractor or any subcontractor covered by the Contract, has been paid a rate of wages less than the minimum wage required to be paid by the Contract, the State may terminate the Contractor's or subcontractor's right to proceed with the Work, or such part of the Work, as to which there has been a failure to pay required wages and to prosecute the Work to completion or otherwise. The Contractor and its sureties shall be liable to the State for any excess costs occasioned thereby.

DIVISION 100 - GENERAL PROVISIONS

SECTION 101 - GENERAL INFORMATION

101.03 Terms.

THE THIRD ITEM LISTED UNDER THE TERM "COMPLETION" IS CHANGED TO:

3. the Contractor has satisfactorily executed and delivered to the Engineer all documents, which is to include the federal form FHWA-47 "Contractor's Statement of Materials and Labor" according to 23CFR 635, for Federal Funded Projects, certifications, and proofs of compliance required by the Contract Documents, it being understood that the satisfactory execution and delivery of said documents, certificates, and proofs of compliance is a requirement of the Contract.

THE TERM "EXTREME WEATHER CONDITIONS" IS CHANGED TO:

EXTREME WEATHER CONDITIONS. When, solely as a result of adverse weather, the Contractor is not able to work, the Contractor is entitled to claim that progress of the Work has been affected by extreme weather conditions and may seek an extension of Contract Time consistent with the provisions of Subsection 108.11.

THE FOLLOWING IS ADDED:

PARCEL. Property to be acquired for transportation purposes, described by metes and bounds.

101.04 Inquiries Regarding the Project.

Inquiries regarding the various types of work of this Contract shall be directed to the following representatives of the Department having offices at P.O. Box 600, Trenton, New Jersey 08625, or such other individuals as may hereafter be designated:

1. **Before Award of the Contract.** All inquiries shall be directed to Mr. Robert Kopf at P.O. Box 600, Trenton, New Jersey 08625.
   Telephone: 609-530-2682
   Fax: 609-530-3853

   All inquiries shall include the following:
   a. Name of the company;
   b. Telephone number, fax number, and contact person; and
   c. Specifics of the inquiry, including anticipated impacts.

   The Department will investigate the information provided in the inquiry and then respond through an addendum only if determined to be necessary.
2. **After Award of the Contract.** All inquiries shall be directed to the Resident Engineer through the following Regional Construction Office:

   South
   Mr. Jeff Palmer, Regional Construction Engineer
   One Executive Suite Route 70 West
   Cherry Hill, NJ 08002
   Telephone: 856-486-6615

SECTION 102 - BIDDING REQUIREMENTS AND CONDITIONS

102.06 Examination of Contract Documents and Site of Project.

1. Investigation of Subsurface and Surface Conditions.

THE SECOND SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Where such investigations have been made, Bidders may, upon written request, inspect the records and reports of the Department as to such investigations subject to and upon the conditions set forth herein.

THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

Geotechnical Engineering Design Reports, if reports are prepared, are parts of the design information made available. Such reports that are prepared for design purposes were designed with reasonable care and in good faith. The analyses and recommendations submitted in these reports are based in part upon the data obtained from subsurface explorations. The nature and extent of variations between these explorations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of these reports.

If a generalized soil profile is described in the text it is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions may vary. For specific information, refer to the boring logs.

These reports have been prepared for the exclusive use of the New Jersey Department of Transportation for specific application to this project in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made.

These reports are for design purposes only and are not sufficient to prepare an accurate bid. Contractors may review these reports with the understanding that their scope is limited to design considerations only.

These reports may contain comparative cost estimates for the purpose of evaluating alternative foundation schemes. These estimates may also involve approximate quantity evaluations. It should be noted that quantity estimates might not be accurate enough for construction bids.

The accuracy of cost estimates as compared to contractor's bids for construction costs is not guaranteed. There is no warranty or guaranty, either expressed or implied, that the conditions indicated in these reports are representative of those existing throughout the project, or any part thereof, or that unlooked-for development may not occur, or that soil properties other than, or at variance with those indicated, may not exist.

THE FOLLOWING IS ADDED TO THE THIRD PARAGRAPH:

Geotechnical Engineering Design Reports may be inspected at the Department's plan file at the same address.

THE EIGHTH PARAGRAPH IS CHANGED TO:

Information derived from such inspection of records of investigations and reports or compilation thereof made by the Department, the Consultant, or assistants, does not relieve the Bidder or Contractor from any risk or from properly fulfilling the terms of the Contract.

6. Existing Structures.
THE FIRST SENTENCE IS CHANGED TO:

A list of existing structures within the Project is provided on the Plans.

SECTION 105 - CONTROL OF WORK

105.09 Cooperation with Utilities.

THE FOLLOWING IS ADDED AFTER THE FIRST PARAGRAPH:

The corporations, companies, agencies, or municipalities owning or controlling the utilities, and the name, title, address, and telephone number of their local representative are as listed below:

Electric
Julius Zacone
Senior Project Engineer
Conectiv Power Delivery
428 Ellis Street
Glassboro, NJ 08028
Tel: (856) 863-7916

Telephone
Mr. Bruce M. Stanley
Manager, Central Engineering Services
Verizon – NJ, Inc.
900 Clinton Avenue
2nd Floor
Irvington, NJ 07111
Tel: (973) 649-3007
Field Representative: Michael W. Schuda
Verizon – NJ
713 Marsha Avenue
Williamstown, NJ 08094
Tel: (856) 728-9928

Cable
Mr. Glenn Heard
Comcast Cable Communications, Inc.
1846 NW Boulevard
Vineland, NJ 08360
Tel: (856) 694-6016

Gas
Mr. Raymond Wenzel
Associate Engineer
South Jersey Gas Company
1 South Jersey Plaza
Route 54
Folsom, NJ 08037
Tel: (609) 561-9000 Ext. 4487

Railroad
Mr. Leo McGlynn
Conrail
1000 Howard Boulevard

Mt. Laurel, NJ 08054
(856) 231-2000

Sewer
Franklin Township
Phil Sartorio
Community Development Director
Delsea Dr
Franklinville, NJ 08322
Phone:(856)694-1234

Bidders are advised to verify the above information as its accuracy and completeness is not guaranteed by the Department.

Utility Work and Time Frames
("Utility" Refers to Utility and Railroad)

General Notes:

1. State's Resident Engineer will provide the utility with notices called for in the schedules.
2. State will provide the utility with survey control. The State and the utility shall jointly verify the location of the facilities prior to installation.
3. Poles shall be placed as close to the right-of-way as practical. A minimum of 0.5m (18") from face of curb to face of pole.
4. Utility schedules are estimated time frames for each utility owner and do not include work performed by other utility owners sharing joint facilities.
5. Utility schedules are based on the project traffic control and staging plan for each utility mobilization. Utility service demands, field and weather conditions may alter these schedules. Contractor changes to the traffic control and staging plan requires reestablishing utility schedules.
6. Where joint poles exist or are proposed each utility will coordinate its work with the other joint owners. The Contractor should be aware that the times noted below are estimated for each owner only and that the total time necessary to complete all of the owners work must be added together.
7. Existing facilities can only be removed after the relocated facilities have been installed and are in operation.
8. Distances, stations, offsets, lengths or units on the utility plan are approximate (plus or minus).
9. All stationing refers to the construction baseline.
10. The safety and continuity of operation of trains shall be of the first importance. During construction, railroad traffic shall be maintained at all times without interruptions, except when approved in advance in writing by the railroad.
11. Railroad will furnish qualified flagman, signalman, or protectionman as may be required to insure complete protection of train operations and railroad facilities. No work shall proceed without proper protection on the site.
12. All construction on the railroad owner's (Conrail) property shall be designed in accordance with Conrail Specifications and shall be accomplished by methods which will in no way cause damage to the tracks, facilities, aerial or underground lines, embankments, or drainage system.
13. It shall be the contractor's responsibility to provide for protection of the tracks and embankment as field approved in a safe and satisfactory manner, to install and maintain such shoring, sheeting and bracing as may be required, and to remove and dispose of such facilities upon completion of work.
14. Blasting will not be permitted on or along the railroad's right of way without prior written approval.
15. Crossing of tracks at grade by equipment and personnel is prohibited except by prior written approval.
16. All aerial and underground utilities crossing the railroad shall inform and obtain permits, if required, from the railroad to occupy and perform work within railroad right of way.

Conectiv Power Delivery - Electric

Existing Facilities

Aerial Transmission Primary and Secondary (34.5, 12 and 7.2kv)

Work To Be Performed By Conectiv Power Delivery

Route 47 SB Sta. 83+837+/- Lt. (pole # a.c.e. pn 9565) to Sta. 83+960+/- Lt. (pole # a.c.e. g-25372), construct three poles #9564, #9563 and #g-25371 and aerial facilities behind proposed curb five feet off R.O.W. Existing poles to be removed by Verizon. Joint poles with telephone/cable.

Route 47 NB Sta. 83+963+/- Rt. (pole #pn 21652), construct one pole and facilities north of entrance drive, aerial cable behind proposed sidewalk within R.O.W. and remove existing pole.

Route 47 SB Sta. 84+037+/- Lt. (pole #t-26/408, g-22897) to Sta. 84+066+/- Lt. (pole #g-22865), construct one pole and aerial facilities behind proposed sidewalk and remove existing pole.

Route 47/40 SB Sta. 84+067+/- (pole #g-22865) to Old Delsea Drive SB Sta. 1+026+/- Lt. (pole #pn 9559), relocate pole g-22865 and aerial cable to approx. Sta. 84+084+/- Lt. behind proposed sidewalk.

Route 47/40 NB Sta. 84+146+/- Rt. (pole # a.c.e. g-11743) to Sta. 84+366+/- Rt. (pole # a.c.e. pn 18870), construct six poles and aerial facilities behind proposed sidewalk. Existing poles to be removed by Verizon. Joint poles electric/telephone.

Route 47/40 NB Sta. 84+097+/- Rt. (lp-unknown #) to Route 47/40 SB Sta. 84+101+/- Lt. (lp-unknown #), construct two poles and aerial facilities behind proposed sidewalk inside R.O.W. remove existing poles.

Route 40 EB Sta. 42+917+/- Rt. (pole #9718) to Sta. 42+817+/- Rt. (pole #pn 9693), construct 2 poles and aerial facilities behind proposed sidewalk within R.O.W. remove existing poles.

Route 40 EB Sta. 42+917+/- Rt. (pole #9718) to West Boulevard Sta. 1+221+/- Rt. (pole #pn 9724), construct three poles and aerial facilities behind proposed sidewalk within R.O.W. joint existing poles electric/telephone to be removed by Verizon.

Route 47 NB Sta. 84+308+/- Rt. (pole #pn 12328) to Sta. 84+307+/- Lt. (pole #pn g-21475), construct aerial facilities and remove existing aerial facilities.

Dutch Mill Sta. 1+048+/- Lt. (pole #pn 16259) to Sta. 84+424+/- Rt. (1-1/2 sty. Frame #496 building), construct one pole and aerial facilities to (pole #pn 16259) behind proposed sidewalk within R.O.W. Remove existing pole and facilities. Joint pole electric/cable tv.

Route 47/40 SB Sta. 84+475+/- Lt. (pole #pn 18871) and Route 47 NB Sta. 84+488+/- Rt. (pole #pn 11300), construct two poles and aerial facilities behind proposed sidewalk within R.O.W. Remove existing poles facilities. Joint pole (pole #pn 11300) electric/cable tv/telephone.

Route 47/40 SB Sta. 84+484+/- Lt. (pole #pn 16258, bt-234-7) to Sta. 84+647+/- Lt. (pole #pn 16254, bt-234-11), construct four poles and aerial facilities behind proposed sidewalk within R.O.W. Existing poles to be removed by Verizon. Joint poles electric/cable tv/telephone.

Route 40 EB Sta. 42+715+/- Rt. (pole #pn 19611) to Sta. 42+711+/- Lt. (pole #pn 34077), construct one pole (#34077) and aerial facilities behind proposed curb. Existing pole to be removed by Verizon. Joint pole electric/cable tv/telephone.

Route 40 EB Sta. 42+742+/- Rt. (light pole #pn 9688) to Sta. 42+741+/- Lt. (pole # 16265), construct one pole (pn 16265) and aerial facilities behind proposed curb. Existing pole to be removed by Verizon. Joint pole electric/cable tv/ telephone.

Route 40 EB Sta. 42+742+/- Rt. (pole #9688) to Sta. 42+675+/- (light pole #pn 9690), construct one pole and aerial facilities behind proposed curb. Remove existing pole and facilities.

Route 40 EB Sta. 42+742+/- Rt. (light pole #pn 9688) to Sta. 42+775+/- Rt. (pole #pn 19597), construct aerial facilities and remove existing facilities.

Route 40 EB Sta. 42+775+/- Rt. (pole #pn 19597) to Sta. 42+774+/- Lt. (pole #pn 11226), construct one pole (#11226) and aerial facilities behind proposed sidewalk within R.O.W. existing pole to be removed by Verizon. Joint poles electric/cable tv/ telephone.

Route 40 WB Sta. 42+788+/- Lt. (pole #pn 9687) to Sta. 42+817+/- Rt. (pole #pn 9693), construct one pole (#9687) and aerial facilities behind proposed curb. Remove existing poles and facilities.

West Boulevard Sta. 1+085+/- Rt. (pole #pn 9721) to Sta. 1+091+/- Lt. (pole #pn 2160), construct one pole and aerial facilities behind proposed sidewalk within R.O.W. Verizon to remove existing poles. Joint poles electric/telephone.

West Boulevard Sta. 1+158+/- Rt. (pole #pn 9722) to Sta. 1+152+/- Lt. (pole #g-19809), construct one pole and aerial facilities behind proposed sidewalk (pole #g-19809) and curb (pole # 9722). Remove existing pole and facilities.

Route 47/40 SB Sta. 84+647+/- Lt. (pole #pn 16254, bt-234-11) to Sta. 84+777+/- Lt. (pole #g-21958), construct two poles and aerial facilities. Joint poles (pole #16254 and 16252) electric/cable tv/telephone. Verizon is to remove pole #'s 16254 and 16252. Conectiv is to remove pole #g-21958.

Route 47/40 SB Sta. 84+647+/- Lt. (pole #pn 16254, bt-234-11) to Sta. 84+654+/- Rt. (2 sty. Building) to Route 47/40 NB Sta. 84+668+/- Rt. (pole #13590) to Sta. 84+680 (1 1/2 sty. Bldg.), Construct one pole and aerial facilities behind proposed sidewalk within R.O.W. remove existing pole #13590 and facilities.

Route 47 SB Sta. 84+734+/- Lt. (pole #pn 16252, by-234-13-ft) to Sta. 84+720+/- Rt. (pole #pn 45770), construct aerial facilities and remove existing facilities.

Route 47/40 SB Sta. 84+969+/- Rt. (light pole #pn 13970) Sta. 85+012+/- Rt. (light pole #13968) to Sta. 85+033+/- Rt. (light pole #13967) to Sta. 85+020+/- Lt. (light pole #13969) to Route 40 WB Sta 43+745+/- Lt. (pole #pn 16238, bt-26b-27-ft) construct five poles and aerial facilities behind proposed guiderail or as per general note #1. Remove existing poles. Pole 13970 to be constructed behind proposed guiderail. Lighting poles and services may be by others.

Route 40 WB Sta. 43+745+/- Lt. (pole #pn 16238, bt-26b-27-ft) to Route 47 NB Sta. 85+164+/- Rt. (pole #pn 16241, bt-26b-30-ft), construct two poles and aerial facilities behind proposed curb. Existing poles to be removed by Verizon. Joint poles electric/cable tv/telephone.

Route 40 WB Sta. 43+745+/- Lt. (pole #pn 16238, bt-26b-27-ft) to Sta. 43+857+/- Lt. (pole #pn 16236, bt-26b-25), construct one pole and aerial facilities behind proposed curb. Existing poles to be removed by Verizon. Joint poles electric/cable tv/telephone. Relocated pole #16236 is to comply with NJDOT guiderail standards.

Route 40 NB Sta. 85+129+/- Rt. (pole #pn 16240, bt-29-ft) to Route 47 SB Sta. 85+123+/- Lt. (pole #pn 41389), construct aerial facilities and remove existing facilities. Joint pole #41389 & #16240, electric/cable tv/telephone.

Route 40 WB Sta. 43+857+/- Lt. (pole #pn 16236, bt-26b-25) to Route 40 EB Sta. 43+860|+/- Rt. (pole #pn 9569, l-19), construct one pole (#18891) and aerial facilities behind proposed sidewalk within R.O.W. existing pole to be removed by Verizon. Joint pole electric/cable tv/telephone.

Route 40 WB Sta. 43+857+/- Lt. (pole #pn 16236, bt-26b-25) to Sta. 43+915+/- Lt. (pole #pn 16235), construct aerial facilities westward on Route 40 behind proposed curb.

Route 40 WB Sta. 43+912+/- Lt. (pole #pn 16235) to Route 40 EB Sta. 43+919+/- Rt. (pole #18892), construct one pole and aerial facilities behind proposed edge of road. Remove existing pole and facilities.

Route 47 SB Sta. 85+365+/- Lt., Construct one pole and connect overhead wiring from pn 16245 on Route 47 NB Sta. 85+357+/- Rt.

Schedule: Company requires 3 weeks notice and 12 weeks to complete items #1, #2 and #3.
Note: Utility shall provide a minimum of 10' clearance for the proposed signals and highway lighting systems (approx. 26' high) located at following intersections:
Rt. 47/Rt. 40&47 & Rt. 40/West Boulevard
Rt. 40&47/Jughandle & Rt. 40/Rt. 47

Verizon, N.J., Inc. –Telephone

Existing Facilities

Underground and aerial facilities within the project limits.

Work to be Performed by Verizon, N.J., Inc.

Route 47 SB Sta. 83+837+/- Lt. to Sta. 83+996+/- Lt., Transfer aerial telephone cable to three new poles constructed by electric, remove existing poles.

Route 47 NB Sta. 84+135+/- Rt. to Sta. 84+251+/- Rt. which is Sta. 1+033+/- Lt. On West Boulevard, construct aerial telephone cable. Remove existing facilities.

From proposed pole #g18093 to proposed pole relocation pn10386 is to have cable in underground conduit.

Route 47 NB Sta. 84+278+/- Rt. which is Sta. 1+045+/- Lt. on West Boulevard to Sta. 1+060+/- Lt. On West Boulevard, install two poles to keep aerial telephone line within R.O.W. line behind proposed curb.

Route 40 EB Sta. 42+915+/- Rt. to Sta. 1+222+/- on West Boulevard, construct aerial telephone cable. Remove existing facilities and poles.

From proposed pole relocation for pn9768 to proposed pole relocation for pn9719 is to have cable in underground conduit.

Route 40 WB Sta. 42+804+/- Lt. to Sta. 1+091+/- Lt. on West Boulevard, construct five poles behind proposed curb and aerial telephone cable. Remove existing facilities and poles.

Route 47 NB Sta. 84+251+/- Rt. which is Sta. 1+033+/- Lt. on West Boulevard to Route 47 NB Sta. 84+366+/- Rt., Construct aerial telephone cable. Remove existing facilities.

Route 47 SB Sta. 84+428+/- Lt. to Sta. 84+735+/- Lt., Transfer aerial telephone lines.

Route 40 WB Sta. 42+659+/- Lt. to Sta. 42+774+/- Lt., Construct two poles behind proposed curb and transfer aerial telephone cable.

Route 40 WB Sta. 42+803+/- Lt. which is Sta. 1+216+/- Rt. on Malaga Park Drive NB, construct one pole behind proposed curb within R.O.W.

Route 40 EB Sta. 42+715+/- Rt. to Sta. 42+818+/- Rt., Construct telephone lines and remove existing facilities.

Route 40 WB Sta. 42+774+/- Lt. to Sta. 42+804+/- Lt., Construct one drop and cables. Remove existing facilities.

Route 40 WB Sta. 42+804+/- Lt. to Sta. 42+818+/- Rt., Construct telephone lines and remove existing facilities.

Route 40 EB Sta. 42+750+/- Rt. to Sta. 42+757+/- Rt., Construct underground telephone ducts and lines under proposed concrete drain pipe.

Construct underground telephone ducts and lines above proposed concrete drain pipe at Sta. 1+211+/- of Old Delsea Drive where it meets Route 40 WB Sta. 42+796+/- Lt.

Route 40 EB Sta. 42+826+/- Rt. to Sta. 42+831+/- Rt., Construct underground telephone ducts and lines under proposed concrete storm drain.

Route 47 SB Sta. 84+735+/- Lt. to Sta. 84+773+/- Rt., Construct aerial telephone cables and remove existing facilities.

Route 40 WB Sta. 43+745+/- Lt. to Sta. 85+163+/- Rt., Transfer aerial telephone cable.

Route 40 WB Sta. 43+745+/- Lt. to Sta. 43+915+/- Lt., Transfer aerial telephone lines from pole # pn 16238 to pole # pn 16236 and transfer aerial line from pole # pn 16236 to pole # pn 16233.

Route 47 SB Sta. 85+123+/- Lt. to Route 47 NB Sta. 85+129+/- Rt., Construct aerial telephone cable and remove existing facilities.

Route 40 WB Sta. 43+857+/- Lt. which is Sta. 3+051+/- Lt. to Route 40 EB Sta. 43+859+/- Rt., Construct aerial telephone cable and remove existing facilities.

Route 40 WB Sta. 43+845+/- Lt. to Sta. 43+853+/- Lt., Construct direct buried cable under proposed drain pipe.

Route 47 SB Sta. 85+365+/- Lt., Construct one new pole and connect overhead wiring from pn 16245 on Route 47 NB Sta. 85+357+/- Rt.

Schedule: Utility requires 3 weeks notice and 8 weeks to complete aerial placing, splicing and pole removal.
Note: Utility shall provide adequate clearance for the proposed signals and highway lighting systems (approx. 26' high) located at Route 47/Route 40&47 & Route 40/West Boulevard.

Comcast Cable Communications, Inc.

Existing Facilities

Aerial facilities within the project limits.

Work To Be Performed By Comcast Cable Communications, Inc.

Route 47 SB Sta. 83+837+/- Lt. to Sta. 83+917+/- Lt. to Sta. 83+996+/- Lt., Construct aerial cable and remove existing facilities.

Route 47 NB Sta. 84+099+/- Lt. to Route 47 SB Sta. 84+104+/- Rt., Construct aerial cable and remove existing facilities.

Route 47 NB Sta. 84+253+/- Rt. which is Sta. 1+033+/- Lt. on West Boulevard to Sta. 42+804+/- Lt. on Route 40 WB, Construct aerial cable and remove existing facilities.

Route 47 NB Sta. 84+253+/- Rt. which is Sta. 1+033+/- Lt. on West Boulevard to Sta. 1+199+/- Lt., Construct aerial cable and remove existing facilities.

Route 47 SB Sta. 84+437+/- Rt. to Sta. 84+441+/- Lt., Construct aerial cable and remove existing facilities.

Route 47 NB Sta. 84+488+/- Rt. to Sta. 84+482+/- Lt., Construct aerial cable and remove existing facilities.

Dutch Mill Sta. 1+048+/- Lt. to Sta. 84+737+/- Lt., Transfer aerial cable.

Route 40 WB Sta. 42+660+/- Lt. to Sta. 42+804+/- Lt., Transfer aerial cable.

Route 40 WB Sta. 42+711+/- Lt. to Sta. 42+742+/- Rt., Construct aerial cable and remove existing facilities.

Malaga Park Drive Sta. 1+250+/- Rt. to Sta. 42+817+/- Rt., Construct aerial cable and remove existing facilities.

Route 47 SB Sta. 84+737+/- Lt. to Sta. 84+771+/- Rt., Construct aerial cable and remove existing facilities.

Route 40 WB Sta. 43+745+/- Lt. to Route 47 NB Sta. 85+165+/- Rt., Transfer aerial cable.

Route 40 WB Sta. 43+745+/- Lt. to Sta. 43+915+/- Lt., Transfer aerial cable.

Route 47 NB Sta. 85+130+/- Rt. to Sta. 85+122+/- Lt., Construct aerial cable and remove existing facilities.

Route 40 WB, Sta. 43+856+/- Lt. which is Sta. 3+050+/- Lt. on Dutch Mill Road to Sta. 43+861+/- Rt., Construct aerial cable and remove existing facilities.

Schedule: Utility requires 2 weeks notice and 4 weeks to complete.
Note: Utility shall provide adequate clearance for the proposed signals and highway lighting systems (approx. 26' high) located at Route 47/Route 40&47 & Route 40/West Boulevard.

South Jersey Gas Company – Gas

Existing Facilities

Gas mains within the project limits (203 mm (8"), 102 mm (4") and 51 mm (2") HP mains).

Work To be Performed by South Jersey Gas Company

Route 47 NB Sta. 83+672+/- Rt. to Route 47 NB Sta. 84+020 Rt., Construct pipe behind proposed curb within R.O.W. Abandon in place existing pipe from Route 47 NB Sta. 83+672+/- Rt. to Sta. 84+020+/- Rt. Then proceeding in to Baseline "O" Sta. 1+075+/- Rt.

Route 47 NB Sta 83+764+/- Rt., Construct pipe across Route 47 NB/SB behind proposed curb. Abandon in place existing pipe.

Route 47 NB Sta. 83+962+/- Rt., Construct pipe across Route 47 NB/SB to connect to existing pipe on New Road Sta. 1+014+/- Lt. Remove existing pipe.

Route 47 NB Sta. 84+083+/- Rt. to baseline "O" Sta. 1+075+/- Rt., Construct pipe across Route 47 NB/SB behind proposed curb. This pipe lateral at Sta. 84+083+/- and proceeding within the R.O.W. behind curb to baseline "O" Sta. 1+075+/- Rt. is partially in kind.

Route 47 NB Sta. 84+289+/- Rt. to West Boulevard Sta. 1+105+/- Lt., Construct pipe behind proposed curb within R.O.W. Connect to existing pipe on West Boulevard.

Route 47 NB Sta. 84+289+/- Rt., Construct pipe across Route 47 NB/SB and connect to existing gas line on Route 47 SB side at Sta. 84+289+/- Lt.

Route 40 EB Sta. 42+612+/- Rt. to Sta. 42+865+/- Rt., Construct pipe behind proposed curb and within R.O.W. Abandon in place existing pipe. Tie-in pipe to new pipe at Route 40 EB Sta. 42+812+/-

Route 40 EB/WB Sta. 42+865+/- Rt., Construct pipe across Route 40 EB/WB. Abandon in place existing pipe.

Old Delsea Drive Sta. 1+075+/- Rt. to Malaga Park Drive Sta. 1+238+/- Rt., Construct pipe behind proposed curb and within R.O.W. Abandon in place existing pipe.

Richman Street Sta 1+010+/- Rt. to Sta. 1+021+/- Rt., Construct pipe behind edge of road and within R.O.W. Abandon in place existing pipe.

Route 47 SB Sta. 83+960+/- Lt. to Route 47 SB Sta. 84+040+/- Lt., Construct pipe behind curb within the R.O.W. Tie over service laterals behind curb.

Route 40 EB Sta. 42+895+/- Lt. to Route 47/40 SB Sta. 84+289+/- Lt., Construct pipe behind curb within the R.O.W. Abandon in place existing pipe.

Route 47 NB Sta. 83+985+/- Rt., Abandon in place existing pipe.

Route 47 NB Sta. 84+008+/- Rt., Abandon in place existing pipe.

Route 47 SB Sta. 84+505+/- Lt. to Sta. 84+774+/- Lt., Construct pipe behind proposed curb and within R.O.W. Abandon in place existing pipe.

Route 47/40 SB Sta. 84+308+/- Lt. to Sta. 84+318+/- Lt., Construct pipe below proposed RCP pipe.

Route 47/40 SB Sta. 84+374+/- Lt. to Sta. 84+382+/- Lt., Construct pipe below proposed RCP pipe.

Route 40 EB Sta. 42+865+/- Lt. to Sta. 42+895+/- Lt., Construct pipe under proposed roadway and behind proposed curb sidewalk.

Route 47/40 SB & NB Sta. 84+758+/- Lt./Rt. to Dutch Mill Road Sta. 2+040+/- Lt., Construct pipe under proposed roadway and under proposed storm drain pipe at Sta. 84+758+/- Rt. And behind proposed curb on Dutch Mill Road from Sta. 2+028+/- Lt. to Sta. 2+040+/- Lt.

Schedule: The utility requires 8 weeks notice and 10 weeks to complete this work.

Franklin Township – Sewer

Existing Facilities

There are no existing facilities.

Work To Be Performed By The State's Contractor

Construct steel sleeve at the following locations:
Route 47 Baseline Sta. 83+940+/-
Route 47 Baseline Sta. 84+650+/-
West Boulevard Baseline Sta. 1+075+/-

Conrail – Railroad

Existing Facilities

One track line under proposed bridge carrying Route 40/47.

Work To Be Performed By Conrail

Conrail to provide railroad flagmen and inspectors.

Work To Be Performed By The State's Contractor

Construct bridge with proposed vertical clearance of 5.563 meters. Remove four existing signal poles.

3. Railroad Traffic and Property.
THE FOLLOWING IS ADDED:

Location	Speed	Number Per Day	Time
Route 47&40	25mph	2	Varies

105.15 Field Office.

1. Construction Field Offices.

a. Type A.
THE FOLLOWING IS ADDED:

(1) Three (3) multi-line touch-tone telephones and two (2) telephone lines for use with the telephones installed as directed and operational in the Field Office and other facilities specified.

(a) Three (3) dedicated, operational telephone line(s) for Fax machines (s) and/or microcomputer system(s) modem use installed as directed in the Field Offices specified.

(b) Two (2) portable hand held cellular phone(s). The cellular telephone plan shall provide for the anticipated usage of approximately 300 minutes per telephone per month. Each of the cellular phones shall have as a minimum the following features:

1) Home rate with no roaming charges within the entire state

2) 832 Channel Compatible
3) Mute Function
4) Back Light Display with Battery Saver
5) Signal Strength Indicator
6) Individual Call Length Timer
7) Full Lock Function
8) 30 Memory Number Feature
9) Low Battery Warning
10) 70 Minute Continuous Use
11) 12 hour Standby Mode
12) Alphanumeric Display
13) Transmission Power 0.6 Watt
14) Passive Repeating Antenna for Vehicle
15) Spare high capacity Battery Pack
16) Home Charging Station
17) Cigarette lighter power adapter /charger
18) AC charging station

(c) Four (4) pager units. The number should be an exchange local to the Project. The units shall have the following features:

1) Lighted Alphanumeric Display
2) Tone and Vibrator Alert
3) High Sensitivity
4) Message Storage
5) Statewide Coverage
6) Exchange Local to Project
7) LCD Readout

(d) One (1) telephone answering machine

(17) The microcomputer system shall include the following:

(a) Two (2) base computer system(s) having at minimum:

1) Pentium IV Processor at 1.5 GHz or faster, Intel processor with MMX technology, with a 512 MB RAM, 32 MB Video RAM, mouse, mouse pad, 60 GB hard drive, one 52X DVD-ROM Drive, one CD-R Recordable Drive, and one 90-millimeter (3½-inch), 1.44 MB floppy diskette drive installed as the "A" drive.
2) 56K baud data/fax modem. (e.g., 3Com U.S. Robotics 56K Faxmodem, 3Com U.S. Robotics Courier V.Everything/V.34 - 56K ITU / x2 Technology, or Hayes Accura 56K).
3) One network card for each base computer system specified, when more than one base computer is specified
4) One Fast Ethernet Hub Switch with appropriate number of ports and cables (e.g., 3COM 100 Hub)
5) One dedicated telephone line to be used in conjunction with the microcomputer modem.
6) 483-millimeter (19-inch) or larger Super VGA color monitor having a dot pitch of 0.28, with anti-glare screen, and tilt/swivel capabilities.
7) 250-Megabyte Zip Drive internal or external with backup software for MS Windows and thirty 250-Megabyte formatted data cartridges corresponding to the tape drive size (e.g., Iomega Zip Drive or equivalent).
8) Uninterruptible power supply (UPS) - OMNI 1000 or approved equal (e.g., APC-1000 - American Power Corporation).
9) Surge protector for the entire computer workstation to be used in conjunction with the UPS (e.g., Zero Surge Power, Inc. - Point of Use - 2R-15 amp/120 volts).
10) Static mat, floor type, 1.2 by 1.5 meters or larger with grounding capabilities.
11) Computer workstation, printer stand, and/or table having both appropriate surface and chair height.
12) Five boxes of 90-millimeter (3½-inch) floppy diskettes that match the drive density of the 1.44-MB floppy diskette drive (ten per box).

13) 150 CD-R 700-MB (or larger) recordable CD's compatible to CD drive.
14) One floppy diskette holder (holds 50 floppy diskettes), and dust covers for the microcomputer, monitor, keyboard, and printer.
15) Two head cleaner kits for 90-millimeter (3½-inch) floppy diskette drive.

(b) One base printer having at minimum:

1) Laser printer having HP PCL 5 emulation, with a 64 Megabyte expanded memory, appropriate printer cable, and legal size tray (e.g., HP-2200 or equivalent).
2) One printer toner cartridge every other month for the duration of the construction project.
3) One 10-ream carton of 8½ X 11 inches size paper (500 sheets per ream, weight: 75 grams per square meter, color: white, grain: long, for laser printers and copiers) every two months for the duration of the construction project.
4) One 10-ream carton of legal size paper (500 sheets per ream, weight: 75 grams per square meter, color: white, grain: long, for laser printers and copiers) every three months for the duration of the construction project.

(c) One software package, on CD-ROM with documentation, including:

1) Microsoft Windows, latest version with future upgrades.
2) Microsoft Office Professional, latest version. Software package should contain the following: word processor, spreadsheet, and database.
3) Helix Nuts and Bolts Advanced Utilities for Windows, latest version, or compatible software package.
4) Anti-Virus software, latest version with monthly updates (e.g., Norton's Anti-Virus, McAffe Anti Virus, or Dr. Solomon's).
5) Visio Professional Graphics Software for Windows, latest version.

(d) One (1) base printer(s) for Primavera having at minimum:

1) Color Inkjet printer of current technology, with appropriate printer cable.
2) Ink cartridge replacements, one of each color, every other month for the duration of the construction project.
3) One 10-ream carton of 8½ X 11 inches size paper (500 sheets per ream, weight: 75 grams per square meter, color: white, grain: long, for laser printers and copiers) every three months for the duration of the construction project.

(e) One (1) Primavera Project Planner (P3) or equivalent software, latest version.

To be approved as a Substitute or "Or Equal", the software must be completely compatible with the Department database that contains the Capital Program Management's design process schedule and budget, as well as the construction scheduling from design through construction. The software shall be compatible with the hierarchy of the coding and able to import and export data within the Department's Capital Program Management's database without distortion of any coding or relationships contained in the database.

The Contractor shall only utilize equivalent or compatible software for a project, which has received written approval from the Department in accordance with the most current NJDOT Capital Program Management Construction Scheduling Standard Coding and Procedures for Designers and Contractors Manual. The approved equivalent/compatible software utilized shall not vary throughout the construction phase.

The following additional equipment shall be furnished by the Contractor for the exclusive use of the Resident Engineer. This equipment shall conform to the applicable ASTM designation, when appropriate, and be in good working condition. The Contractor shall repair or replace damaged equipment throughout the duration of the Contract. The equipment shall become the property of the Contractor after Acceptance:

Six (6) each: hard hats (Orange in color, reflectorized) and safety vests (Orange in color, reflectorized, 360° high-visibility that meet ANSI/ISEA standards for Class 3 garments). It should be noted that safety vests are to be replaced yearly for the duration of the project.

Six (6) sets: ear protection and eye protection

One (1) metric measuring wheel

Twelve (12) two-meter folding wood rules

SECTION 106 – CONTROL OF MATERIAL

106.03 Materials, Inspections, Tests, and Samples.
THE FOLLOWING SUBPART IS ADDED:

D. **Sharing of Pay-Adjustments for Portland Cement Concrete.** Positive and negative pay-adjustments, as defined in Subsection 914.02, Subpart E, are awarded to encourage high quality construction and, when necessary, to recoup the anticipated extra costs to the Department resulting from poor quality construction. The manner in which positive and negative pay-adjustments are to be shared by the prime Contractor and Subcontractors or Producers is to be negotiated by the affected parties. A letter signed by both parties, stating that an agreement has been reached between the parties shall be provided to the Engineer before commencement of Work. Nothing contained herein shall create right of action either in law or equity against the Department.

106.06 Materials Field Laboratory
THE FOLLOWING IS ADDED AFTER THE FIRST PARAGRAPH:

The Contractor shall annually pay all fees necessary to procure and maintain a Uniform Code Type Four Fire Permit according to regulations of the New Jersey Department of Community Affairs. Additional information concerning the permit fees and processing of the application may be obtained by contacting the Bureau of Materials.

THE LAST SEVEN PARAGRAPHS ARE CHANGED TO:

Setting up the materials field laboratory shall consist of furnishing the laboratory and enclosure complete with furniture, equipment, electricity, water, heating, air-conditioning, installation and activation of telephone lines, telephone sets (touch tone and cellular), pager units, sanitary facilities, and lavatory supplies.

Maintenance of the materials field laboratory, for the time required, shall consist of maintaining the furniture, equipment, and utilities which includes the cost of telephone fixed monthly service charges, cellular phone fixed monthly service charges for the plan specified and pager services, providing lavatory supplies, janitorial and waste disposal services weekly, restocking of the first aid box, and snow removal services. Maintenance of the materials field laboratory shall also include monthly rent.

Payment for nuclear density gauge will be made by the number of units supplied.

Payment for setting up the materials field laboratory will be made by the number of units.

Payment for the maintenance of the materials field laboratory will be made for each month or fraction thereof that the materials field laboratory is required, except that payment will not be made for any month or fraction thereof in which the Contractor is assessed liquidated damages according to Subsection 108.16.

Payment will be made under:

Pay Item	*Pay Unit*
NUCLEAR DENSITY GAUGE	UNIT
MATERIALS FIELD LABORATORY SET-UP	UNIT
MATERIALS FIELD LABORATORY MAINTENANCE	MONTH

Payment for telephone service will be made according to Subsection 108.15.

SECTION 107 - LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

107.22 Risks Assumed by the Contractor
SUBPART 1 IS CHANGED TO:

1. **Risks of Loss or Damage to the Permanent Construction.** Until Acceptance, and within the limits of the Project's work, the Contractor shall bear the risk of all loss or damage to all permanent construction and temporary construction performed under this Contract and to materials, whether or

not it has received payment for such construction or materials under Subsection 109.05, 109.06, or 109.07, except payment will be made to the Contractor for the repair or replacement of any permanent element of the construction which has not been accepted by the Department, if the element of the work damaged is completed to the stage of serving its intended function and is subsequently damaged by accident by public traffic. In order to receive payment, the Contractor must supply satisfactory evidence that such damage was caused by a public traffic accident which was not caused by vandalism or by the equipment of the Contractor or any of its subcontractors or suppliers. Satisfactory evidence shall generally be limited to: accident reports filed with the Division of Motor Vehicles, police agencies or insurance companies; statements by reliable, unbiased eye witnesses; identification of the vehicle involved in the accident. Physical evidence that the damage was caused by a motor vehicle (such as tire marks or broken headlight glass) will not be sufficient unless it can be clearly shown that the damage was not caused by the Contractor's vehicles or by vandalism. The Contractor shall take every precaution, as allowed by the Contract against injury or damage to any part of the construction or to materials by the action of the elements, the traveling public, vandalism, or from any other cause, whether arising from the execution or the non-execution of the work. The Contractor shall promptly repair, replace, and make good any such damage or loss without cost to the Department. The Contractor shall not bear such risk of loss or damage, which arises from acts of war or floods, tidal waves, earthquakes, cyclones, tornadoes, hurricanes, or other cataclysmic natural phenomenon unless such loss or damage is covered by insurance.

107.23 Insurance.

6. Railroad Insurance.

Insurance coverage shall be procured and maintained for the following railroad(s):

Consolidated Rail Corporation (CONRAIL)

It is estimated that 20 percent of the Project cost is located within or adjacent to the railroad right-of-way.

SECTION 108 - PROSECUTION AND PROGRESS

108.02 Subcontracting.

Specialty Items are as listed below:

Above ground highway lighting items.
Electrical wire items.

108.03 Commencement of Work.

THE THIRD SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Construction operations shall not begin until the Contractor has supplied, and the Engineer has accepted, the preliminary schedule and other certifications, forms, schedules, and any other information required by the Contract Documents, and until the Contractor has established a field office as required by Subsection 105.15.

108.04 Progress Schedule and Prosecution of the Work.

THIS SUBSECTION IS CHANGED TO:

In scheduling and executing the Work, the following shall be complied with:

1. **Progress Schedules.** The progress schedule shall conform to and incorporate the following requirements:
   a. **General.**
      (1) The work shall be monitored by a detailed CPM schedule. The CPM schedule shall be developed utilizing the most current NJDOT Capital Program Management Construction

Scheduling Standard Coding and Procedures for Designers and Contractors Manual and the NJDOT Primavera template project containing the latest standard coding. The manual and template are available from the Bureau of Quality Management Services.

The CPM schedule shall consist of diagrams and accompanying mathematical analyses. The scheduling of submittals, procurement, construction, and all else necessary to complete the Work as described in the Contract Documents, is the responsibility of the Contractor. The requirement for the CPM schedule is included to ensure adequate planning and execution of the Work and to assist the Department in appraising the reasonableness of the proposed schedule, as well as its compliance with Contract requirements.

The CPM schedule is the Contractor's committed plan to complete all work within the allotted time. The Contractor assumes full responsibility for the prosecution of the Work as shown. The CPM schedule shall be based on and derived from detailed schedules used to complete all Contract activities.

(2) No claim for extension of time due to extra work or any other type of delay will be considered unless the baseline schedule has been approved and monthly updates are current and submitted within the time limits stated.

(3) No claim for additional compensation as specified in Subsection 109.04 will be considered unless the baseline schedule has been approved and monthly updates are current and submitted within the time limits stated.

(4) The CPM preliminary, baseline, and updated schedules shall be submitted in electronic format on a floppy diskette or compact disk, in addition to the required number of copies specified in b. (1) and b. (2) below.

(5) Once the CPM baseline schedule has been approved, the Contractor shall not deviate therefrom without first notifying the Engineer in writing and schedule is updated in accordance with 1.h. and 1.i. below.

b. Submittals. The CPM schedule shall consist of the following two distinct initial submittals:

(1) **Preliminary Schedule.** No later than 10 State Business Days after execution of the Contract, the Contractor shall submit to the Engineer for review and approval or rejection and return a preliminary schedule. The contractor shall submit six copies of:

(a) A CPM time-scaled diagram defining the Contractor's planned activities during the first 90 Calendar Days. For projects with a construction cost over $ 40 million, a CPM time-scaled diagram defining the Contractor's planned activities during the first 120 Calendar Days.

(b) A summary network for the remainder of the Contract time. The preliminary schedule shall indicate all milestone activities expected to be completed or partially completed before submission and approval of the CPM baseline schedule as specified in b. (2) below.

(c) All multiple shifts per day and anticipated production rates shall be detailed in the Contractor's narrative accompanying the preliminary schedule.

(d) The Work shall not begin until the preliminary schedule has been approved. Five State Business Days will be required for review and approval or rejection and return of the preliminary schedule.

(2) **Baseline CPM Schedule.** In accordance with the time frames listed below, the Contractor shall submit six copies of the Baseline CPM Schedule documents depicting the Contractor's work plan for the entire Contract.

Project Construction Cost ($ million)	Time Frame After Approval of Preliminary Schedule for Submission of the Baseline CPM Schedule (State Business Days)
< 5	10
5 - 15	15
15 - 40	20
> 40	30

The Contractor shall submit to the Engineer for review and approval or rejection and return:

(a) Computer generated tabular schedule and logic reports in accordance with 1.e. below.
(b) Time-scaled computer generated Layout Output in conformance with 1.f. below.
(c) A written narrative explaining the schedule and the Contractor's general approach for achieving Substantial Completion and the date of Completion as specified in Subsection 108.10 of these Special Provisions. Multiple shifts per day and anticipated production rates shall be detailed in the Contractor's narrative accompanying the Baseline CPM Schedule.
(d) Electronic version as specified in 1.a. (4) above.

c. CPM Schedule Requirements for the Baseline and Updates.

(1) The CPM schedule and updates shall contain the following:
(a) The order in which the Contractor proposes to prosecute the Work; the starting dates of the various work stages, operations, and principal items of work including procurement of materials and plant, and the contemplated dates for completing the same.
(b) List dates for all required submissions.
(c) A clear outline of the intended maintenance of traffic.
(d) The locations and timeframes for the installation of temporary and permanent soil erosion and sediment control measures to be installed.
(e) All unusual requirements specific to the project included in the Contract Documents or as deemed appropriate for the project.
(f) Special consideration to sensitive areas such as wetlands, floodplains, waterways, and parklands to ensure that appropriate staging and seasonal constraints are considered in order to maximize the effectiveness of the soil erosion and sediment controls.
(g) The time frames when work is restricted in sensitive areas as reflected in present and future permits as anticipated or known.
(h) Updates to reflect permit conditions if changed.
(i) Include a detailed, step-by-step outline of any clean-up operations regarding contaminated material.
(j) The work of the Contractor, subcontractors, suppliers, the Department, permitting agencies, utility companies, and all others that affect progress shall be shown and identified on the schedule by responsibility codes.
(k) Procurement activities shall be shown, including plans, permits, materials, individual working drawings, fabrication, and delivery of the material. Twenty State Business Days will be required for review and certification or rejection and return of fabrication working drawings. Thirty State Business Days will be required for review and approval or rejection and return of working drawings for items that were included as conceptual and the Contractor is required to complete final design plans. The time frames set forth in this paragraph are provided for scheduling purposes only. The Department reserves the right to enlarge such time periods for review by a reasonable amount of time where circumstances necessitate, within the sole discretion of the Engineer.
(l) Traffic staging, delivery of Department - furnished labor/equipment, project phasing, right-of-way availability dates, and any other requirements specified in Divisions 200 through 900 shall be shown.
(m) The CPM schedule shall contain sufficient activities to adequately depict the Work, and will be subject to the review and approval of the Engineer.
(n) The logic and activity time durations established by the Contractor shall be consistent with the Contract Documents and be reflective of proper coordination between trades.

(2) The CPM schedule shall operate as follows:
(a) The CPM schedule shall be of the precedence type.
(b) One activity for each discrete component part of each Pay Item scheduled in the Proposal. The Engineer may allow grouping of similar Pay Items into one activity. No work activity shall have a duration greater than 30 Calendar Days, except as approved by the Engineer. The activities shall be consistent with the Work Breakdown Structure (WBS), and shall also include discrete component parts of the Contractor's submittal preparation, Department

approval, procurement, and construction work activities with sufficient detail such that all the relationships with all direct and non-direct parties to the Work are shown.

(c) The system shall be based upon network diagrams and accompanying mathematical tabulations as described hereinafter. Diagrams shall show the order and interdependence of activities and the sequence and quantities in which work is to be accomplished. The basic concept of network scheduling shall be followed to show how the start of a given activity is dependent on the completion of preceding activities and how its completion may affect the start of subsequent activities. The critical path shall be distinguished from other paths on the network.

(d) The completion date of the CPM schedule shall be the date of Completion specified in Subsection 108.10 of these Special Provisions, except as specified in Subsection 108.04 subpart 5, which shall be input as a Finish Milestone with a Late Finish Constraint. All Intermediate Milestones required in the Contract shall be shown in proper logical sequence and input as a "Start-no-Earlier-Than" constraint for entrance into an area or start activity or a "Finish-no-Later-Than" constraint date for completions.

(e) Activities shall be described such that the Work is readily identifiable for assessment of start and completion, as well as intermediate status. Descriptions shall utilize activity codes for physical locations at each stage such as distance-markers, structures, and elevations where possible to define the Work. Activity descriptions of "Start," "Continue," "Completion," "X percent," "Y percent," "Z percent" or similar nonspecific descriptions will not be allowed.

(f) The CPM schedule shall be calculated in Working Days. The Working Day to calendar date correlation shall be based upon the Contractors proposed work week with adequate allowance for weekends, legal holidays and any special requirements of the Contract. Activities shall indicate the calendar being used. Durations for activities shall not be less than one workday. Multiple shifts per day and anticipated production rates shall be detailed in the Contractor's narrative accompanying the baseline schedule and subsequent updates.

(g) Constraint dates are permitted only on milestone activities, unless otherwise approved by the Engineer.

(h) All activities with the exception of the Project Start Milestone and Project Completion Milestone shall have predecessors and successors. The start of an activity shall have a Start-to-Start or Finish-to-Start relationship with preceding activities. The completion of an activity shall have a Finish-to-Start or Finish-to-Finish relationship with a succeeding activity. Start-to-Finish relationships are not acceptable.

(i) CPM schedules, which have been resource leveled, are permissible, provided the effects of leveling are incorporated in the schedule using "Start-no-Earlier-Than" date constraints.

d. Computer Program Requirements. The computer program requirements shall be the same as that specified in Subsection 105.15 subpart 1.e. of these Special Provisions.

e. Tabular Reports.

(1) CPM schedule reports shall be provided for the following sort orders:

(a) Total float, then early start for activities with float less than 20 days.

(b) Grouped by responsibility, then by early start.

(c) Grouped by WBS, area, then sorted by early start.

(2) The minimum activity information required for each of the above reports in (1), shall include the following:

(a) A unique activity ID for each activity.

(b) A description of the Work represented by the activity.

(c) Location code identification.

(d) Work responsibility code identification.

(e) Original activity duration and remaining activity duration in Working Days.

(f) Early and late, start and finish dates calculated according to CPM principles.

(g) Total float.

(h) Historical (actual) dates for activities completed or underway shall replace the appropriate calculated dates.

(i) Stages.

(j) Calendar used for each activity.

f. CPM Time-Scaled Layout Output.

(1) The network displayed on the schedule diagram shall depict the exact detail of the CPM schedule reports.
(2) The network diagram shall be of the precedence type and drawn by using early dates.
(3) The layout output shall be time-scaled. The length of the activity representation shall be proportional to the activity duration.
(4) The activity display shall include the:
(a) Activity description.
(b) Activity identification.
(c) Activity original duration and remaining duration.
(d) Activities coded by area, responsibility, and WBS.
(e) Activity total float.
(f) Activities early start dates.
(g) Activities finish dates.
(5) The activities, which are displayed on the network diagram, shall be grouped by WBS and sorted by area. The title of these components shall appear on the left-hand side of the plot.
(6) The critical path shall be identified on the plot.
(7) Vertical lines indicating the start and the end of each month shall be shown.
(8) The data date shall be indicated on the plot in the activity display and in the title at the top or bottom of the plot.
(9) Completed activities shall be indicated on the plot.
(10) The Contract title shall be displayed on the plot.
(11) A legend shall be provided which indicates the various symbols used and their meanings.
(12) Milestone Activity shall be indicated by a prominent symbol.
(13) Different line types shall indicate the critical path and completed Milestone and activities.

g. Review and Approval. The Engineer will review a submitted preliminary schedule for approval or rejection within five State Business Days of receipt and will thereafter return same to the party having submitted it. There will, in turn, be allotted ten State Business Days for review and approval or rejection by the Engineer of the submitted baseline schedule, which will thereafter be returned to the party having submitted it. The Engineer will review revised preliminary or revised baseline submittals within five State Business Days of receipt. The time periods set forth in this paragraph are provided for scheduling purposes only. The Department reserves the right to enlarge such time periods for review by a reasonable amount of time where circumstances necessitate, within the sole discretion of the Engineer.

h. Updating and Revisions.

(1) Within ten State Business Days after review by the Engineer, all preliminary and baseline schedules that are not approved shall be revised and resubmitted by the Contractor until the Engineer's approval is received.
(2) The Contractor shall update the CPM schedule monthly whether or not the Engineer has accepted the schedule, to reflect actual activity progress. The update shall include the historical record of actual start and actual finish dates for activities in progress, or completed, and the remaining duration based on the amount of workdays required to complete the activity.
(3) Monthly progress meetings shall be held. The updated CPM schedule shall be the basis for the monthly progress review meetings. Activity progress shall be prepared in advance of the meeting. At this meeting, attended by the Engineer, all progress during the calendar month shall be presented and reviewed for incorporation into the schedule by the Contractor. Within a period of ten State Business Days from the date of this progress meeting, the Contractor shall submit the schedule update to the Engineer with the agreed upon changes.
(4) The monthly schedule update submission shall consist of three copies of electronic format on floppy diskettes or compact disks and three copies of the following:
(a) Updated CPM schedule reports (see Item e. above).
(b) Layout output. (See item f. above)
(c) CPM progress narrative.

The CPM progress narrative report submitted as part of the update analysis shall include, but not be limited to, the:

1. Description of schedule status.
2. Discussion of current and anticipated delaying problem areas and their estimated impact.
3. Schedule slippage, pay revisions, and/or progress along the critical path in terms of days ahead or behind the allowable dates, and if the Work is behind schedule, progress along other paths with negative float. This shall be in addition to and not a substitute for requirements in Subsection 108.11.
4. Logic changes and an explanation of the revisions. Revisions to activities not worked on during the period, including changes in duration, or revisions to activity relationships are to be considered logic revisions. Out-of-sequence activities are not acceptable and shall be corrected in logic revisions prior to submission to the Department.

(5) When, in the Engineer's opinion, the CPM schedule fails to reflect the Contractor's actual plan and method of operation, or the Contractor's completion date as indicated by the CPM is more than one month behind the Contract completion date, the Engineer may require the Contractor to submit for review within ten State Business Days, a recovery plan for completion of the remaining work within the Contract completion date. A recovery plan shall include, but not be limited to, a revised CPM schedule and additional manpower and equipment that shall be utilized to complete the project by the date of Completion.

(6) When the Contractor adds activities that are not Extra Work Items to the CPM schedule, they shall be added in a method that completion dates of any succeeding baseline activities are not affected. All revisions shall be submitted to the Engineer for approval before incorporation into the CPM schedule.

(7) The Engineer shall have the right, within its sole discretion, to prepare its own update(s) or revision(s) to the baseline schedule in the event of a dispute between the parties regarding the appropriateness of the submitted revision(s) or updates to the baseline schedule or by reason of a failure on the part of the contractor to prepare same, which update(s) or revision(s) may reflect what the Engineer has determined to be the actual status of the project progress, actual sequencing of the Work and appropriate scheduling logic required under this Subsection. The Engineer may thereupon rely on its own revision(s) or update(s) of the baseline schedule in the administration of the project, review of claims and/or the imposition of liquidated damages.

i. **Changes and Delays.** To ensure that the CPM schedule continues to accurately reflect the Contractor's plan for the Work and that it incorporates the impact of all changes and delays as soon as the Work scope can be defined, the Contractor shall use the following procedure to incorporate changes and delays.

When Extra Work or a change is proposed or claimed, the Contractor shall submit a Time Impact Evaluation form. Each Time Impact Evaluation must identify in a CPM fragnet sketch, additional work required as a result of the proposal and its interrelationship to the CPM schedule. Each change or delay shall be represented by adding a new activity or activities. These activities shall be clearly identified. This sketch shall show all activities, logic revisions, duration changes, and new activities with all the predecessors and successors. The Time Impact Evaluation form shall also include any associated cost changes for performing the Work in question. Upon the Engineer's approval of the Time Impact Evaluation, the Contractor shall incorporate the fragnet's illustrating the influence of changes and delays into the baseline schedule and the working schedule in the next schedule update. An extension of time may only be considered when the Time Impacted scheduled completion date exceeds the date of Completion. For cases where the Contractor is behind schedule, an extension will be granted for only the amount of time that the Department is responsible as supported by a Time Impact Evaluation. In the event of a dispute, the Engineer may prepare an update, which is believed to be the true impact on the project. No additional compensation will be paid to the Contractor for preparing these revisions. Any request for extension of time shall be verified by CPM analysis and shall be in accordance with Subsection 108.11. Compensation for additional expense to the Contractor and allowance of additional time for completion of the Work shall be as set forth in a Construction Order in accordance with Subsections 108.11 and 109.03.

2. **Staging.** The Contractor shall schedule the Work using such procedures and staging as may be specified in the Contract Documents. Work designated as part of separate stages may be performed simultaneously where provided by the Contract Documents or where approved.

When the Contract Documents provide for staging or specific procedures, the Contractor may present, for written approval of the Engineer, a detailed, written alternate staging plan or procedure which incorporates the requirements of the Department. If the Contractor proposes an alternate-staging plan, two CPM schedules shall be submitted. One based on the original staging and one based on the Contractor's alternate staging. As a condition of the Engineer's reviewing of the alternate staging plan or procedure, the Contractor agrees that it is not entitled to additional Contract Time or compensation arising from possible delays to construction due to the time spent in reviewing the Contractor's staging plan or procedure, regardless of whether the Department accepts or rejects it. The Engineer will review and approve or reject and or return, with comments, the staging plan within ten State Business Days. If such staging plan or alternate procedure is approved in writing, the Contractor shall then finalize the progress schedule consistent with the alternate approved staging.

3. **Prosecution of the Work.**
   a. At or prior to the preconstruction conference, the Contractor shall furnish the name and location of the solid waste facilities to be utilized as well as the fee structure of each of the facilities. Failure to provide such information shall make the Contractor ineligible for adjusted compensation as provided for in Subsection 104.07.
   b. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the Completion of the Project in accordance with the Contract Documents and within the time set forth under Subsection 108.10.
   c. The Contractor shall supply the Engineer with a weekly work schedule indicating the Contractor's planned work, the subcontractor's planned work, the dates when materials and submissions are to be delivered, and a forecast of lane closings.
   d. The Contractor shall notify the Engineer, in writing, prior to discontinuing work for any reason and at least 24 hours in advance of resuming operations.
   e. The Contractor shall arrange and prosecute the Work so that each successive construction operation at each location shall follow the preceding operation as closely as the requirements of the various types of construction permit.
   f. Underground structures for traffic signals, except for pressure detector installations shall be constructed prior to completion of the intersecting road.
   g. Work, which closes or alters the use of existing roadways shall not be undertaken until adequate provisions, conforming to the requirements of Section 617, have been made by the Contractor and approved.
   h. The Engineer may revise stage construction and maintenance of traffic, if deemed necessary, by the Engineer due to unforeseen circumstances that may arise during construction.
   i. When possible, the construction of subsurface structures adjacent to traffic shall be performed while traffic is being diverted from such areas. If traffic must be maintained in such areas, the Work shall be done expeditiously in stages, as approved, and with minimum interference with traffic.
   j. Subsurface structure excavation adjacent to traffic shall not remain open overnight unless adequately protected by approved safety devices.
   k. The Contractor shall proceed with the Work of demolition of the various buildings that are identified with a demolition number as and when they become available for demolition. If any of the buildings to be demolished is not available for demolition at the time the Contractor begins work on the Project, the Contractor shall temporarily defer its work in the vicinity of the building and complete the Work when the building is made available for demolition.
   l. Operations adjacent to traffic shall be confined to only one side of the traffic at any one time unless otherwise specified in the Contract Documents.
   m. Concrete curbs constructed adjacent to flexible base and surface courses shall be completed, cured, and backfilled before the flexible base and surface courses are constructed.
   n. Bituminous paving operations shall be staged to progress up to the bottom of the surface course. The top layer of the bituminous concrete surface course for the full width of the traveled way,

shoulder, and auxiliary lanes shall be paved as a single stage of construction and as the final paving operation.

4. **Acceleration and Default.** If, in the opinion of the Engineer, the Contractor falls behind its baseline schedule, and cannot complete the Work within the time prescribed under Subsection 108.10, as modified pursuant to Subsection 108.11, the Contractor shall take such steps as may be necessary to improve its progress. The Engineer may require the Contractor to increase the number of shifts, begin overtime operations, work extra days including weekends and holidays, or supplement its construction plant and to submit for approval such supplementary schedule or schedules, as may be deemed necessary to demonstrate the manner in which the agreed rate of progress shall be regained, all at no cost to the State.

   Failure of the Contractor to comply with the requirements of the Engineer under this Subheading is grounds for the determination that the Contractor is not prosecuting the Work with such diligence as to ensure Completion within the time specified. Upon such determination, the Engineer may terminate the Contractor's right to proceed with the Work or any separate part thereof in accordance with Subsection 108.17.

5. **Intent, Responsibility, and Time.** Scheduling of construction shall be the responsibility of the Contractor. The Contractor's shall determine the most feasible order of work commensurate with the Contractor's abilities and the Contract Documents. The CPM schedule will be used for determining extensions or reductions of Contract Time pursuant to Subsection 108.11.

   It is not intended that the Engineer, by approving the CPM schedule, agrees that it is reasonable in any or all respects or that following the CPM schedule can result in timely completion of the Project. The progress schedule is not a part of the Contract.

   If, in the preparation of the CPM schedule, the Contractor reflects a completion date different than that specified under Subsection 108.10, this in no way voids the date set therein. The date as specified in that Subsection governs. Where the CPM schedule reflects a completion date earlier than that specified as the Contract Time, the Engineer may approve such schedule with the Contractor specifically understanding that no claim for additional Contract Time or compensation shall be brought against the State as the result of failure to complete the Work by the earlier date shown on the CPM schedule.

6. **Payment.** Payment for the accepted progress schedule will be made on a lump sum basis for the costs for schedule preparation, maintenance, updating, facilities, personnel, computer hardware and software requirements, schedule submittals and reproduction as specified. Twenty-five percent of the lump sum bid will be paid upon approval of the baseline submission, and the balance paid on approval of updates at a prorated sum based upon the number of anticipated updates to be submitted during the Contract Time.

   Payment will be made under:

Pay Item	*Pay Unit*
PROGRESS SCHEDULE	LUMP SUM

108.05 Mobilization.

THIS SUBSECTION IS CHANGED TO:

Mobilization shall consist of the preparatory work and operations necessary for the movement of personnel, equipment, supplies, and incidentals to the Project site, and other work performed or costs incurred prior to beginning Work.

Payment for mobilization will be made on a lump sum basis regardless of the fact that the Contractor may have, for any reason, shut down its work on the Project or moved equipment away from the Project and back again.

Payment will be made in accordance with the following schedule:

1. When five percent of the Work is completed and the Baseline Progress Schedule is approved by the Engineer, 25 percent of the lump sum bid for mobilization or 2.5 percent of the Total Contract Price, whichever is less, will be paid.
2. When ten percent of the Work is completed and all required CPM Progress Schedule Updates are approved by the Engineer, 50 percent of the lump sum bid for mobilization or five percent of the Total Contract Price, whichever is less, will be paid.
3. When 15 percent of the Work is completed and all required CPM Progress Schedule Updates are approved by the Engineer, 75 percent of the lump sum bid for mobilization or 7.5 percent of the Total Contract Price, whichever is less, will be paid.

4. When 20 percent of the Work is completed and all required CPM Progress Schedule Updates are approved by the Engineer, 100 percent of the lump sum bid for mobilization or ten percent of the Total Contract Price, whichever is less, will be paid.
5. When all Work on the Project is complete, payment for the lump sum bid for mobilization in excess of ten percent of the Total Contract Price will be made.
6. The percentage of Work completed shall be the total of payments earned compared to the Total Contract Price. The total of payments earned excludes the amount paid for this item and the amount paid for materials furnished but not incorporated into the Work in accordance with Subsection 109.06, as shown on the monthly estimates of the approximate quantities of Work performed, prepared in accordance with Subsection 109.05.
7. No payment will be made for mobilization until a Baseline Schedule is approved, except when all Work on the Project is complete, then 50 percent of the lump sum bid for mobilization will be paid and no further payment(s) will be made for the lump sum bid for mobilization.

Payment will be made under:

Pay Item	*Pay Unit*
MOBILIZATION	LUMP SUM

When mobilization is not a Pay Item, all costs for the Work shall be included in the prices bid for various Pay Items scheduled in the Proposal.

108.10 Time of Completion.

A. All work required for Substantial Completion of the Project shall be completed on or before May 12, 2006

B. The entire Work of the Project shall be completed on or before July 11, 2006.

Stage 3 Construction, as shown on the plans, shall be completed within 2 calendar weeks of commencement. For each calendar day that the Contractor fails to complete Stage 3 Construction operations, the Contractor shall pay liquidated damages consisting of Road User Costs and Construction Engineering Costs, as defined in Subsection 101.03, to the State in the amount of $3,400.00.

108.11 Extensions and Reductions of Contract Time.

THIS SUBSECTION IS CHANGED TO:

A. Basis for Extension. Where appropriate under the provisions of this Subsection, extensions or reductions to the Contract Time may be provided by Construction Order, however, such extensions or reductions will be allowed only to the extent that the increase or decrease in the Work or delays of the types indicated below affect current controlling operations and the overall Completion. Increases or decreases in Work or such delays, which do not affect the overall Completion, are not to be the basis for reduction or extension of Contract Time. Extensions of Contract Time will not be granted under this Subsection where it is determined that the Contractor could have avoided the circumstances which caused the request for extension.

If the Contractor is delayed in completion of the Work by reason of changes made under Subsection 104.02, or by failure of the Department to acquire right-of-way, or by any act of other contractors consistent with Subsection 105.10, or due to the discovery of archeological finds consistent with Subsection 108.13, or the discovery of hazardous substances, or by any act of the Engineer or of the Department not contemplated by the Contract, an extension of Contract Time commensurate with the delay in overall completion of the Contract thus caused will be granted, and the Contractor is relieved from any claim for liquidated damages or engineering and inspection charges.

Additionally, the Contractor may be granted an extension of Contract Time and not be assessed liquidated damages or the costs of engineering and inspection for any portion of the delay in overall completion of the Work beyond the time provided in Subsection 108.10 caused by the following reasons:

1. acts of civil or military authorities, war, or riot;

2. fire;
3. floods, tidal waves, earthquakes, cyclones, tornadoes, hurricanes, or other cataclysmic natural phenomenon (except on working day contracts);
4. extreme weather conditions (see Item 1 of the fourth paragraph) (except on working day contracts);
5. epidemics or quarantine restrictions;
6. strikes or labor disputes beyond the control of the Contractor which prevent work on the construction operations which are critical to the completion of the Project;
7. shortages of materials (see Item 2 of the fourth paragraph) or freight embargoes;
8. acts of the State in its sovereign capacity;
9. failure of the Engineer to furnish interpretations of the Contract Documents (see Item 3 of the fourth paragraph).

B. Criteria for Evaluation. Extension of Contract Time for the reasons set forth in this Subsection will not be granted unless the Contractor has notified the Engineer in writing of the causes of delay within 15 State Business Days from the beginning of any such delay on forms provided by the Department. The Engineer will evaluate the facts and the extent of the delay, and the Engineer's findings will be final and conclusive and will be based on the following:

1. Extensions of Contract Time for extreme weather conditions will be granted in accordance with the following:

Number of Days the Contractor's Work is Limited to in One Month as the Result of Extreme Weather Conditions (April through November inclusive)	Extension of Contract Time Allowable
16 - 31	0
15	1
14	2
13	3
12	4
11	5
10	6
9	7
8	8
7	9
6	10
5	11
4	12
3	13
2	14
1	15
0	16

Extensions of Contract Time for extreme weather conditions will be granted in accordance with the following for the months of December through March inclusive:

It is anticipated that the average number of total Working Days during this four month winter period is twenty (20)for road work (Exclusive of temperature sensitive work, for example but not limited to, paving operations, earthwork, aggregates, curb and sidewalk, etc.) and ten (10) for bridge work (Exclusive of temperature sensitive work, for example but not limited to, concrete decks, parapets, bridge repairs, bridge painting, etc.)

In using the above, the Engineer will:

a. Consider days for which an extension is granted under the above category "floods, tidal waves, earthquakes, cyclones, tornadoes, hurricanes, or other cataclysmic natural phenomenon" as days on which the Contractor's work is limited as the result of these extreme weather conditions;
b. Consider days for which an extension is granted under the above categories for causes other than "floods, tidal waves, earthquakes, cyclones, tornadoes, hurricanes, or other

cataclysmic natural phenomenon" as days on which the Contractor worked and was unaffected by extreme weather conditions; and

c. Make the above calculation based on the full number of days in the calendar month as being days on which the Contractor could have worked without regard to Saturdays, Sundays, and holidays.

d. Extension of time for extreme weather conditions will only be granted when the Critical Path of the Progress Schedule is affected and documented by the contractor in accordance with Subsection108.04. No extension of time will be granted unless the Contractor submits daily documentation of such extreme weather.

2. Extensions of Contract Time will not be granted for a delay caused by a shortage of materials unless the Contractor furnishes:

   a. Documentary proof that it has diligently made every effort to obtain such materials from all known sources within reasonable distance from the Work, and

   b. Further proof in the form of a progress schedule, as required in Subsection 108.04, showing that the inability to obtain such materials when originally planned, did, in fact, delayed the date of Completion which could not be compensated for by revising the sequence of the Contractor's operations. The term "shortage of materials" applies only to raw and fabricated materials, articles, parts, or equipment which are standard items and does not apply to materials, parts, articles, or equipment which are processed, made, constructed, fabricated, or manufactured to meet the specific requirements of the Contract. Only the physical shortage of materials and not the cost of materials will be considered.

3. Extensions of Contract Time will not be granted for failure of the Engineer to furnish interpretations of the Contract Documents until 20 State Business Days after receipt of such demand in writing as required by Subsections 105.01 and 105.07, and not then unless such request for an interpretation of the Contract Documents is reasonable and made in good faith, and the failure to respond was unwarranted.

4. It is understood and agreed that the Contractor has considered in its bid all of the permanent and temporary utility facilities in their present or relocated positions as may be shown on Plans, as described in Specifications and as revealed by its site investigation; is aware that utility company service demands, adverse field conditions and emergencies may affect the owner's ability to comply with the proposed schedules for utility work; and is cognizant of the limited ability of the State to control the actions of the utility companies, including the actions of railroads, and has made allowances in its bid. Extensions of Contract Time will be granted for extreme weather and exigent circumstances only, as specifically set forth above and which are outside the control of the respective utility company(ies) or the Contractor as determined by the Engineer utilizing the Extreme Weather provisions specified in 1. above. Extension of time for utility work will only be granted when the Critical Path of the Progress Schedule is affected and documented by the Contractor in accordance with Subsection108.04.

Except where specifically provided in the Contract Documents, the Contractor shall not make any claim for damages or additional compensation for any delay in or hindrance to the performance of the Contract occasioned by any act or omission to act by the State or any of its representatives, or for any of the reasons enumerated in this Subsection and agrees that any such claim shall be fully compensated for by an extension of Contract Time to complete performance of the Work.

Extensions of Contract Time will not be granted due to delays caused by, or in any way related to, the financial condition of the Contractor, subcontractors, sub-subcontractors, material, men, fabricators, or suppliers. The Contractor and its surety assume full responsibility for ensuring that the financial condition of any of the above does not delay completion of the Contract.

If, as a result of modifications made under Subsection 104.02, 104.05, 104.06, or 108.09, the Work required is reduced or altered so that the time required for Completion is reduced, the Engineer may reduce the Contract Time provided under Subsection 108.10. The Engineer will evaluate the facts and the extent of the reduction. The Engineer's findings thereon will be final and conclusive.

It is the intention of the above provisions that the Contractor or surety is not relieved of liability for liquidated damages or engineering and inspection charges for any period of delay in Completion in excess of that expressly provided for in this Subsection.

108.12 Right-Of-Way Delays.
THE TITLE OF THIS SUBSECTION IS CHANGED TO:

108.12 Right-Of-Way Information and Delays.

108.12 Right-Of-Way Information and Delays.
THE FOLLOWING IS ADDED:

The Contractor shall obtain from the Engineer all information regarding ROW Parcels and Easements acquired for the Project as well as the nature and type of title acquired. The Contractor shall make periodic requests for updates to this information during the course of the Contract.

The Contractor shall not enter an Easement until the Resident Engineer provides written notice to the property owner. The Contractor shall provide written notice to the Resident Engineer, 30 calendar days prior to entering a particular Easement or right, which is lesser than a fee interest. The Contractor shall make no claim for delays by reason that entry upon an Easement or right which is lesser than a fee interest is conditioned upon notice or is limited in duration; the Contractor is required to schedule accordingly and take such limitations into account when planning performance of the Work.

Temporary Easements and/or temporary construction rights will in most cases contain a limitation as to the length of time that they are extant. The Contractor shall schedule the Work pursuant to Subsection 108.04 so as to accommodate the particular time limitations of an Easement or right which is lesser than a fee interest as reflected on the R.O.W. plans. The Contractor shall provide a written request to the Engineer that the Department procure an extension from the owner of a particular temporary easement or right, which is lesser than a fee simple interest, so as to enable the Contractor to continue occupancy of or re-enter same in the future, beyond the initial time period set forth in the respective property description prior to the expiration thereof.

Where the Contractor fails to complete the work within an area of a temporary easement or right lesser than a fee interest during the time allowed under the property description, by reason of the Contractor's own fault; the Contractor shall reimburse the State for the sum payable to the owner of the underlying fee interest for the extended period of occupancy use. The Resident Engineer may deduct an amount equal to such payments from the monthly estimate of the Work performed after providing 30 day written notice to the Contractor of such action, including a breakdown of the costs sought or to be sought by reason of the delay in timely vacating a temporary easement or right lesser than a fee interest.

The following is a list of all rights-of way that have not been secured and their approximate anticipated dates of availability:

Properties and Vacation/Availability Dates

Parcel No.	Approximate Baseline Station	Offset/Direction	Date
R2A & ER2B	83+710 to 83+965	± 10m/Northbound	1/23/04

108.16 Failure to Complete on Time.
LIQUIDATED DAMAGES SHALL BE AS FOLLOWS:

1. For each Calendar Day that the Contractor fails to complete Construction Operations, as specified in Item A of Subsection 108.10 of these Special Provisions, for Substantial Completion, the Contractor shall pay liquidated damages consisting of Road User Costs and Construction Engineering Costs, as defined in Subsection 101.03, to the State in the amount of $3,400.00
2. For each Calendar Day that the Contractor fails to complete the entire Work of the Project as specified in Item B of Subsection 108.10 of these Special Provisions, for Completion, the Contractor shall pay liquidated damages consisting of Construction Engineering Costs, as defined in Subsection 101.03, to the State in the amount of $2,200.00, provided that Construction Operations as specified for Substantial Completion are actually completed.

The days in default set forth above are the number of Calendar Days in default when the time for Completion is specified on the basis of Calendar Days or a specified completion date, and are the number of Working Days in default when the time for Completion is specified on the basis of Working Days.

Anytime after the Engineer notifies the Contractor in writing, that Substantial Completion of the Project has been actually achieved, the Commissioner may elect, to waive the imposition of liquidated damages under paragraph number 2 above and, in lieu thereof, require the Contractor to pay the actual costs incurred by the State for engineering, inspection, and administration (including overhead) between the actual date of Substantial Completion or such subsequent date as the Commissioner may determine and the actual date of Completion of all Work, as established by the Certificate of Completion. The Contractor hereby waives the right to challenge this election by the Commissioner on the grounds that such costs exceed the amount of liquidated damages specified in Subsection 108.16, Subpart 2.

The Commissioner will recover all damages specified above by deducting the amount thereof from any monies due or that may become due the Contractor, or from the Contractor or from its surety.

108.19 Lane Occupancy Charges.

THE FOLLOWING IS ADDED:

The rate or rates to be applied in the calculation of a Lane Occupancy Charge shall be in accordance with the following:

Description	Rate per Minute per Lane
Overrun of Alternating Traffic	$10/minute

SECTION 109 – MEASUREMENT AND PAYMENT

109.03 Force Account Payment.

5. Profit. Profit shall be computed at ten percent of the following:

SUBPART C. IS ADDED AS FOLLOWS:

c. Total fringe benefits on total direct labor cost as computed above.

6. Overhead.

THE FIRST SENTENCE IS CHANGED TO:

Any and all overhead for the Contractor is defined to include the following:

THE FIRST SENTENCE OF THE SECOND PARAGRAPH IS CHANGED TO:

Any and all overhead costs of the Contractor for Force Account work shall be computed at 15 percent of the following:

109.07 Payment Following Substantial Completion.

SUBPART 1 OF THE FIRST PARAGRAPH IS CHANGED TO:

1. Each subcontractor or supplier has been promptly paid any amount due from any previous progress payment and shall be paid any amount due from the current progress payment, including all retainage withheld from the subcontractor or supplier, within 14 days of the receipt by the Contractor of payment from the Department; or

DIVISION 200 - EARTHWORK

SECTION 201 - CLEARING SITE

201.03 Clearing Site.
THE FOLLOWING IS ADDED:

The Contractor shall conduct all clearing and removal activities in areas identified on the environmental plan sheets as containing Regulated Waste in accordance with the Site Specific Health and Safety Plan (HASP) in Subsection 202.04 and 202.13. The Contractor shall institute controls to minimize contact with materials containing regulated waste as defined elsewhere in the Special Provisions and Specifications during clearing and removal activities. Site clearing shall not be initiated until the Contractor's Site Specific HASP has been reviewed and accepted by the Engineer.

201.04 Removal of Bridges, Culverts, and Other Structures.
THE FOLLOWING IS ADDED:

Before starting any demolition work, the Contractor shall submit his procedure to the Engineer in accordance with Subsection 105.04. The limits of bridge removal are indicated on the plans.

The use of explosives for the removal work to be performed under this contract will not be permitted.

The bridge work to be performed under this Contract includes removal and disposal of reinforced concrete bridge decks, sidewalks, curbs, parapets, deck joints, railings, and conduit as shown on the Plans and as directed by the Engineer.

The equipment listed below is permitted subject to the following applicable restrictions:

1. **Pneumatic or Electric Equivalent Hand Operated Hammers.**
   a. Up to 41-kilogram (90-pound) hammers exclusive of the bit may be used for deck removal not closer than 150 millimeters to structural members. This hammer may also be used for removal of barriers, sidewalks, curbs, and parapets not closer than 150 millimeters from structural members. Only chisel point bits will be permitted. Structural members are defined as girders, floorbeams, stringers, diaphragms, or cross frames.
   b. Up to 14-kilogram (30-pound) hammers exclusive of bit may be used for removal of concrete within 150 millimeters of structural members.
2. **Saw Cutters.**
   a. Vermeer concrete cutters or cutting saws may be used to cut within 150 millimeters adjacent to structural members.
   b. If water is used in conjunction with cutting operations, shielding beneath the operation shall prevent water leakage. Water shall be disposed by an approved method. The disposal method shall be submitted by the Contractor for approval by the Engineer.
3. **Hydraulic Breakers.** Hydraulic breakers, such as, but not limited to, Tramac or other ram-hoe type breakers, are permitted for removal of substructure concrete. For deck concrete removal, such equipment is permitted subject to the following restrictions:
   a. The girders shall be analyzed to determine if induced stresses may be harmful.
   b. The centerline and limits of the top flange of girders shall be delineated before starting the equipment operation.
   c. The equipment shall not be used directly over the top of girders nor in overhang areas. Concrete removal in these areas shall be performed by jackhammers.
   d. Pulling and twisting of the reinforcement steel is prohibited.
   e. Any damage to existing reinforcement, shear studs, structural steel, or any other structural components that are to remain shall be repaired at no cost to the State.
4. **Hydraulic Splitters.** Hydraulic splitters such as Darda hydraulic splitters are permitted subject to approval.
5. **Other Equipment.** Equipment not specifically approved in this Section may be used only with written approval.

THE FOLLOWING IS ADDED:

Special protective systems for the removal of bridges, culverts, and other structures shall be as follows:

1. **Temporary Shielding.** Temporary shielding for demolition and new construction shall include furnishing, installing, and removing a structural framing and barrier system. The system shall be supported from girders to provide an adequate and substantial temporary shielding system to protect vehicular, pedestrian, and railroad traffic from falling construction materials or other objects. The barrier system shall remain in place during the time that construction work is performed and until the work is completed and accepted.

   For deck replacement or new deck work, the temporary shielding shall seal the underside of deck and extend outside of the fascia stringers to enclose the soffits and parapets.

   For parapet removal and replacement or new parapet construction, an outrigging type of temporary shielding, which encloses the soffit and parapet, shall be used.

   The Contractor shall submit for approval detailed working drawings showing all elements of the temporary shielding system, including bonding and grounding over electrified rail lines, design calculations, and the sequence of operations thereof, signed and sealed by a Professional Engineer licensed in the State. Should the Contractor's operation or construction staging require it to install and remove the shielding more than once, no additional payment will be made.

   The traffic lanes and pedestrian areas below the areas where temporary shielding is being installed shall be closed, in accordance with the requirements of Section 617.

   The temporary shielding shall be designed to withstand a load of at least 5.75 kilopascals or greater if heavier loads are anticipated and shall prevent small particles and dust from falling through.

   Bolted connections or welding between temporary shielding and bottom flanges of the beams shall not be permitted. Any materials dropped on the temporary shielding shall not be allowed to accumulate and shall be removed promptly.

   The selection of sizes, materials, their arrangements, and details shall be the Contractor's option and responsibility, but subject to approval by the Engineer.

   In no case shall the temporary shielding reduce the existing underclearances of the bridges to less than 4.5 meters over roadways and 6.75 meters over railroads. If any existing underclearance is less than these values, it shall be maintained without any further reduction.

   The Contractor shall obtain the Engineer's approval of the method, design, and details of the temporary shielding system that the Contractor intends to use for the protection of traffic. No construction work shall be performed above traffic before such approval.

201.07 Removal of Underground Storage Tanks

THE FIRST PARAGRAPH IS CHANGED TO:

The general locations and types of underground storage tanks to be removed are provided in Environmental Plan Sheets and as noted below. The information given below was developed from secondary sources and must be verified by the Contractor. The Contractor shall excavate test pits as necessary to confirm locations, types, and sizes of underground storage tanks in accordance with Subsection 207.04. The Contractor shall use the information concerning underground storage tanks to complete and submit the NJDEP's Underground Storage Tank Facility Questionnaire(s) for unregistered USTs, 30 day Notices of Intent to Close an Underground Storage Tank System, Site Investigation Reports, and Storage Tank Closure Plans. All Reports must be received by the NJDOT and their environmental consultant, as well as notice of receipt and approval by the NJDEP, prior to payment.

Parcel No.	Identifier	Tank Size	Contents	Tank Registration No.
33	D-1	2000 gallon	Heating Oil	Unknown

201.08 Sealing of Abandoned Wells.

THE FOLLOWING IS ADDED:

Monitoring wells identified by the Engineer shall be abandoned and sealed in accordance with N.J.A.C. 7:9-9.1 *et seq*. A copy of well abandonment records shall be submitted to the Engineer at the same time as and in addition to submitting the original record to the NJDEP.

201.09 Demolition of Buildings.

4. Demolition Operations.

THE FOLLOWING IS ADDED BEFORE THE FIRST PARAGRAPH

Prior to start of demolition operations, the Contractor shall remove and properly dispose of all chemicals, miscellaneous cylinders, drums and garbage from the buildings.

THE FOLLOWING IS ADDED:

Wastewater and sewage from the Old Malaga School drain to a septic system. The septic tank is located behind the school, approximately 6 meters behind the UST. The Contractor shall properly close the septic system prior to demolition operations.

201.09 Demolition of Buildings

THE FOLLOWING IS ADDED TO THIS SECTION:

The contractor shall notify the Franklin Township Board of Education (856-629-9500) a minimum of two weeks prior to demolition operations commencing on the Old Malaga School building.

During demolition operations of the Old Malaga School building, the contractor shall protect and salvage the stone dedication plaque at the entrance of the school, any cornerstones that may be present, and save some of the bricks from the building. The contractor shall contact The Franklin Township Board of Education to coordinate storage of the salvaged items and quantity of bricks to be saved.

201.12 Basis of Payment.

THE FOLLOWING IS ADDED AFTER THE THIRD PARAGRAPH:

The payment schedule for "Clearing Site, Bridge (Structure No. 0833150)" will be as follows:

Payment for the Pay Item "Clearing Site, Bridge (Structure No. 0833150)" in excess of $90,000 will not be made until Substantial Completion.

Sixty percent of the price bid (or $54,000, whichever is less) upon acceptance of Stage I demolition.

Forty percent of the price bid (or $36,000, whichever is less) upon acceptance of Stage II demolition.

THE FOLLOWING IS ADDED:

Separate payment will not be made for disposal of all contents of buildings demolished, including such items as containers of chemicals and adhesives, cylinders, drums, storage tanks in buildings and garbage.

SECTION 202 - ROADWAY EXCAVATION

202.01 Description.

THE FOLLOWING IS ADDED:

This work shall also include the excavation, handling, stockpiling, disposal and/or recycling of Regulated Waste generated in excavation for roadway, foundations, utilities and subsurface structures.

202.04 Excavation.

THE LAST PARAGRAPH IS CHANGED TO:

All unstable material shall be used in embankments, as directed, or disposed of in accordance with Subsection 202.12 and 202.13, as appropriate.

THE FOLLOWING IS ADDED:

MANAGEMENT OF REGULATED WASTE

Preliminary analysis has identified areas of contaminated soil within and adjacent to planned excavation areas. Excavation in areas containing one or more contaminants exceeding New Jersey Department of Environmental Protection (NJDEP) soil cleanup criteria, as identified in the construction documents, as directed by the Engineer, or as determined by the Contractor and approved by the Engineer, shall be performed in accordance with applicable Federal and State law, rules and regulations; The Contractor's Site Specific Health and Safety Plan (HASP); the specifications and the direction of the Engineer.

A. REQUIREMENTS AND METHODS FOR EXCAVATION AND MANAGEMENT OF REGULATED WASTE

Description. The work shall include the excavation, handling, stockpiling, sampling and analysis for disposal, reuse on-site and disposal, recycling or treatment of regulated waste except as provided for in Subsection 202.13. The disposal of Regulated Waste shall comply with the plan, specifications, Federal, State and local law, rules, and regulations, the waste management plan of the district of origin, and Subsection 202.13. The term 'Regulated Waste' as used shall mean Regulated Waste and Regulated Waste, Hazardous as appropriate.

Construction Requirements. The Contractor shall provide all personnel, materials and equipment needed to undertake excavation as required to complete the work in a safe manner that is protective of human health and the environment. Excavation of Regulated Waste shall be performed with equipment of suitable size and compatible with site conditions. All equipment shall comply with and shall be operated in accordance with all applicable regulations. Excavation of Regulated Waste shall be to the limits shown on the plans and no further, unless directed by the Engineer.

The Contractor shall handle all excavated material in a manner that protects site personnel, the public, and the environment in accordance with all applicable federal, state, and local laws and regulations. Prior to any excavation of regulated waste the Contractor shall develop a Site-Specific Health and Safety Plan (HASP) in accordance with 29 CFR 1910, 29 CFR 1926 and the Site Specific Health and Safety Requirements specified herein.

Environmental Sampling and Testing. The Contractor shall provide all personnel, materials and equipment needed to properly characterize excavated Regulated Waste material as required for disposal/recycling facility approval. The Contractor shall submit as part of the Material Handling Plan described herein, a sampling analysis section for characterizing the Regulated Waste for off-site disposal in accordance with applicable Federal, State and Local laws, rules and regulations: or according to the disposal facility accepting the waste.

The Contractor shall submit as part of the sampling and analysis section, the name, address and telephone number of the contact for the Contractor's proposed environmental laboratory and the name and experience of the proposed environmental sampling technician. The use of a proposed environmental laboratory and proposed environmental sampling technician are subject to review and acceptance by the Engineer.

The Contractor shall provide all personnel, equipment and ancillary services required to collect, transport and analyze environmental samples required for proper characterization of the material. All sampling, testing and inspections conducted in areas containing potential regulated waste shall be performed in accordance with the site-specific HASP in Subsection 202.04.

All sampling, testing and data management procedures shall comply with current versions of the NJDEP Field Sampling Procedures Manual, NJDEP Technical Requirements for Site Remediation, NJDEP Management of Excavated Soils Guidelines, Appendix 1 of the NJDEP Waste Classification Form and EPA requirements.

Where required by the Contractor's disposal facility, the Contractor shall collect and analyze for additional parameters necessary for off-site disposal.

Stockpiling Regulated Waste. The Contractor shall provide all personnel, materials and equipment needed to properly store (and dewater, if necessary) Regulated Waste in temporary stockpiles. If needed, any temporary stockpile(s) shall be located at area(s) within the project limits selected by the Contractor and approved by the Resident Engineer. Regulated Waste, not suitable for construction activities and/or reuse, shall not be stockpiled for more than 180 days. Regulated waste subsequently classified as hazardous shall be properly stage and removed within 90 days of excavation.

Stockpiles shall only be placed on dry areas on a layer of minimum 10mils thick PVC sheeting or similar, as approved by the Engineer and contained with hay bales or silt fence placed continuously at the perimeter of the stockpile(s). All joints in the underlying PVC sheeting shall overlap with a minimum of 300 millimeters at the ends. Stockpile shall be constructed so that heights shall not exceed 4.5 meters, nor with sideslopes steeper than one vertical and two horizontal. The Contractor shall segregate material of differing types and degrees of contamination so as to prevent cross-contamination of uncontaminated material.

The Contractor shall provide protection for the regulated waste stockpile to prevent the run-on of stormwater, migration of contaminants, dusting, erosion and unauthorized contact. Stockpiles shall be covered with PVC sheeting of the same thickness. The sheeting shall be secured in place with tie downs and/or heavy objects such as concrete blocks at the end of each workday and during adverse weather conditions. All joints in the cover shall have a minimum 300 millimeters overlap and securing materials shall be placed along the joints such that the cover will not be opened by wind action.

The Contractor shall be responsible for the proper protection and maintenance for the regulated waste stockpile and embankment until completion of the work and acceptance by the Engineer. The Contractor shall maintain the sheeting as needed to repair damage and replace displaced cover sheeting. At the direction of the Engineer, the Contractor shall remedy any observed deficiencies in the cover and sediment barrier surrounding the temporary stockpile or embankment as soon as practicable, including but not limited to the removal and disposal of accumulated sediments behind the sediment barrier, to maintain satisfactory protection, and as otherwise needed to prevent contamination migration or exposure.

Drainage shall be controlled with hay bales, placed continuously at the perimeter of the stockpile(s), PVC cover and silt fence such that run-on and run-off from the regulated waste stockpile(s) are mitigated. Decant from the dewatering of sediments shall be in accordance with the Pollution Prevention and Control Plan (described herein Subsection 212.06).

Soil/Sediment Usage Tracking Log. The Contractor shall monitor and record on Daily Soil/Sediment Tracking Logs the source location, type, quantity, and characteristics of Regulated Waste excavated, stockpiled, and. The Contractor shall submit a Daily Soil/Sediment Tracking Log to the Engineer for each workday involving excavation, stockpiling, transport and disposal of regulated waste. The Daily Soil Tracking Log shall contain, at a minimum, the following information:

A) Date,
B) Location(s) of excavation and placement of material,
C) Volume of regulated waste removed, and
D) Name(s) and signature(s) of the Contractor representative(s) responsible for preparing and executing the Usage Tracking Log.

Copies of Daily Soil/Sediment Tracking Logs shall be submitted to the Engineer on a weekly basis. The Engineer will not approve any progress payment invoice if the required Daily Soil/Sediment Tracking logs have not been submitted.

B. SITE-SPECIFIC HEALTH AND SAFETY REQUIREMENTS

Background Environmental Information. The documentation and environmental information provided by the NJDOT is for information purposes only. The Contractor is responsible for appropriate interpretation of the information. The Contractor shall perform a hazard assessment of each proposed work task and make an independent evaluation regarding the appropriate level of health and safety requirements.

Description. This work shall consist of the Contractor preparing, submitting and implementing a Site-Specific Health and Safety Plan (HASP) in accordance with all applicable health and safety requirements for work in and with contaminated soil, sediment and water. The Engineer shall review all submittals for compliance with the health and safety requirements. Excavation shall not be commenced until the Engineer's review has been completed as evidenced by written comment and acceptance as to completeness and compliance with these specifications. The Engineer will not approve the plan. However, acceptance of the plan by the Engineer implies only that at the time of review, the Engineer was not aware of any reasons to object to the plan. The acceptance of the plan, by the Engineer, does not relieve the Contractor of any responsibilities under the contract.

Construction Requirements. The Contractor shall employ a Certified Industrial Hygienist (CIH) or Certified Safety Professional (CSP) to develop and oversee implementation of the Contractor's HASP. The CIH/CSP shall prepare the HASP to protect the Contractor's employees, the subcontractor's employees, NJDOT employees and consultants, and the public from contamination present in the areas requiring excavation as designated on the construction plans. The HASP shall be prepared in accordance with all applicable local, state, and federal rules and regulations, including the health and safety requirements of OSHA 29 CFR parts 1910 and 1926.

The CIH/CSP shall review the site specific data and address the proposed activities to the level of detail as needed to ensure that site specific data, appropriate regulations, and a description of the site conditions are incorporated into the HASP. The Contractor shall comply with all the requirements of the accepted HASP during the excavation, handling, stockpiling, disposal, or recycling of regulated wastes.

The HASP as needed shall describe workplace and emergency procedures to be followed so that this project may be constructed in a safe manner. The HASP shall govern all facets of the project constructed and encompass the activities of all persons who enter and/or work on the site. The HASP shall incorporate procedures that conform to all federal, state, and local regulations pertaining to employee working conditions where appropriate, National Institute for Occupational Safety and Health (NIOSH), Occupational Safety and Health Administration (OSHA), US Coast Guard, US Environmental Protection Agency (USEPA), and New Jersey Department of Environmental Protection (NJDEP).

The HASP shall require that a health and safety designate monitor the working conditions during all excavation procedures and during the handling of regulated wastes to ensure conformance with the accepted HASP. The CIH/CSP shall evaluate the need for air monitoring during excavation and loading operations in Regulated Waste. The air monitoring program shall, if deemed necessary by the CIH/CSP, be implemented by the CIH/CSP or an assigned designate suitably trained and approved by the CIH/CSP for the work required. The CIH/CSP shall include in the HASP applicable training and qualifications documentation for him/her self and each health and safety designate.

The Contractor shall provide initial and annual training and medical monitoring for all contractor employees scheduled to work in/with contaminated soil/water and per the Engineers request up to ten (10) state employees and/or their authorized representatives as per OSHA 29 CFR 1910. The initial training for state employees and/or their authorized representatives shall be provided one (1) month prior to any excavation.

The Contractor shall deliver four (4) copies of the HASP and a listing of the health and safety personnel prior to clearing site to the Engineer for review and acceptance at least one month prior to beginning excavation. No work on the site shall be permitted until the HASP has been submitted, reviewed and accepted by the Engineer. The Contractor shall be responsible for implementing the HASP submitted to and accepted by the Engineer. The Contractor shall deliver original logs and reports related to the HASP to the Engineer on a weekly basis.

C. MATERIAL HANDLING PLAN

This work shall consist of developing and implementing a Materials Handling Plan (MHP) for Regulated Waste encountered, moved, and disposed and/or recycled during construction. The MHP shall explain the Contractor's planned techniques to be used in managing Regulated Waste so as to protect workers, the Resident Engineer and his representatives, visitors, the public and adjoining property owners against uncontrolled exposure to Regulated Waste, plus to prevent uncontrolled release of Regulated Waste to the environment.

The Contractor shall prepare and submit for Engineer's approval a MHP prior to any excavation. The MHP shall detail standard operating procedures for excavation, stockpiling, transporting, sampling and analysis, measurement, transportation, and disposal of hazardous and regulated waste. The Contractor shall make all necessary modifications to the MHP that result from comments given by the Engineer and the Department. The Contractor shall perform planning, administrative and control functions required in implementing the MHP. The MHP shall be in full compliance with the Specification. The Contractor shall implement the MHP in accordance with the contract documents.

The Contractor shall not commence work activities governed by the MHP until the Engineer has given written acceptance of the MHP. The Contractor shall submit the MHP to the Engineer for review and acceptance at least one month prior to commencing excavation.

The Contractor MHP shall include at a minimum: details of current certification, permits, insurance types and levels of coverage; qualifications of the transportation and receiving facilities; the types of equipment to be used in transporting regulated waste; proposed route(s) to disposal facilities and weighing facilities; waste characterization forms, sampling logs and analyses reports; transport manifests; and waste disposal documentation forms from the receiving facility.

The Contractor shall provide periodic reports documenting the excavation, stockpiling, sampling, off-site management and on-site placement of Regulated Waste. The periodic reports shall be mailed to the Engineer by the tenth calendar day of each month. The periodic reports shall provide the location and date(s) of excavation, stockpiling, sampling, off-site management, and placement of regulated Waste. The periodic reports shall explain any changes to or differences with construction plans. The periodic reports shall also include dates of planned excavation, sampling and off-site management of Regulated Waste for the coming months.

The contractor shall provide a final report documenting the Management of Regulated Waste, including the location and date(s) of excavation, stockpiling, sampling, off-site management, and on-site placement of Regulated Waste. The Contractor shall deliver four paper copies and one digital copy of the final report to the Engineer within one-month of completing all Roadway Excavation, Regulated Waste, Off-Site Management of Regulated Waste and Embankment.

202.09 Milling of HMA.

2. Construction Requirements.

THE FOLLOWING IS ADDED AFTER THE NINTH PARAGRAPH:

Milled areas shall not be left unpaved for longer than 72 hours, unless approved by the Engineer.

Subsection 202.13 Disposal of Regulated Waste.

THE TITLE AND CONTENT OF THIS SUBSECTION IS CHANGED TO:

202.13. Off-Site Management of Regulated Waste
Off-Site Management of Regulated Waste, Hazardous

Description. This work shall include the loading and off-site transport, and disposal Regulated Waste and Regulated Waste, Hazardous designated by the Engineer as excess, unusable or unsuitable material to the project. The disposal, recycling or treatment of Regulated Waste and Regulated Waste, Hazardous shall be in accordance with these specifications, the Material Handling Plan, Federal and State laws, rules, and regulations and local laws, and the waste management plan of the district of origin. The references to Regulated Waste hereinafter shall mean Regulated Waste and Regulated Waste, Hazardous as appropriate.

Construction Requirements. The Contractor shall provide all labor, equipment and materials needed to load, transport and dispose/recycle of Regulated Waste in a manner protective of human health and the environment. All work in and with Regulated Waste shall be performed in accordance with 202.04 Management of Regulated Waste and applicable Federal, State and Local regulations.

Transport and Disposal of Regulated Waste. The Contractor shall provide all personnel, material and equipment needed to transport and dispose/recycle all Regulated Waste generated on the project in accordance with Federal and State laws, rules, and regulations and local laws, the waste management plan of the district of origin and Subsection 201.10.

The Contractor shall be solely responsible for locating and contracting with appropriate hauler(s) and disposal facility(ies) for the Regulated Waste directed to be removed in accordance with Federal and State laws, rules and regulations and local laws. The Contractor shall prepare and submit all documentation to obtain all Federal, State or local approvals and fees necessary for disposing of regulated waste. The Contractor shall ensure that the waste disposal facility(ies) proposed for receipt of the material is (are) properly permitted to accept the classification of Regulated Waste.

The Contractor shall submit to the Engineer, results of waste sampling and analysis, waste facility applications and acceptance documentation, and fee payment requirements at least two weeks prior to planned removal of Regulated Waste. The Contractor shall submit to the Engineer a bill of lading (for ID-27 waste) or a hazardous waste manifest (for hazardous waste) for each truckload of Regulated Waste removed from the site. The bill of landing and/or waste manifest form shall present the following information:

A. Transport subcontractor name, address, permit number and phone number.
B. Type and quantity of waste removed.
C. Weight of vehicle with weigh slip.
D. Recycling or disposal facility name, address, permit number and telephone number.
E. Date removed from site.
F. Signature of transport vehicle operator.
G. Waste manifest number.

A representative of the Engineer will sign all waste manifests and/or bill of lading as the generator of the waste. The Contractor shall submit to the Engineer a copy of all waste manifests of Regulated Waste by the end of the day that the truck leaves the site.

All vehicles leaving the site with Regulated Waste shall be inspected by the Contractor to ensure that no excess soil adheres to the wheels or under carriage of the vehicles, and securely covered and equipped to prevent leakage of water. In the event of leakage of soil or water to the public roads, the Contractor shall immediately clean the road to restore it to the original condition and immediately notify the Engineer.

The licensed hauler shall transport the Regulated Waste to the disposal/recycling facility with no unauthorized stops in between, except as required by regulatory authority. The hauler shall use appropriate vehicles and operating practices to prevent spillage from occurring during transport. Regulated Waste shall not be transported over public roads if they contain free liquid or are sufficiently wet to be potentially flowable during transport.

The Contractor shall obtain appropriate documentation of disposal facility acceptance of the Regulated Waste and provide a copy of the documentation, including the weight ticket slips, to the Engineer and the County of origin within ten working days of waste acceptance at the disposal facility.

Should any problems arise regarding the facility chosen to accept the Regulated Waste for off-site management that would require the return of waste, or should such facility have violated any environmental regulation which may result in any regulatory enforcement action, the Contractor shall immediately notify the Engineer in writing of such a situation. The Contractor shall propose an alternate disposal facility, and obtain the written approval of the Engineer for off-site management at such facility.

The disposal of all Regulated Waste shall be in accordance with the Material Handling Plan, Federal and State laws, rules and regulations and local laws and the waste management plan of the district of origin.

The NJDOT will provide the Contractor with a USEPA Hazardous Waste Identification Number for the project containing Hazardous Waste.

202.14 Method of Measurement.

THE FOLLOWING IS ADDED:

Off-site management of Regulated Waste, which includes the off-site transport and the disposal/recycling of Regulated Waste, classified as non-hazardous waste shall be measured by the megagram. This will be verified by using certified weigh tickets.

Off-site management of Regulated Waste, Hazardous, which includes the off-site transport and the disposal of Regulated Waste, classified as hazardous waste shall be measured by the megagram. This will be verified by using certified weigh tickets.

Sampling and Analysis for disposal and/or recycling will be measured by the unit. Each unit will include all costs associated with planning, collecting, analyzing, and processing individual waste characterization samples as needed by regulatory authority and/or disposal/recyling facility to classify regulated wastes and obtain regulatory and/or facility approval for acceptance.

202.15 Basis of Payment.

THE FOLLOWING PAY ITEMS ARE ADDED:

Pay Item	*Pay Unit*
OFF-SITE MANAGEMENT OF REGULATED WASTE	MEGAGRAM
OFF-SITE MANAGEMENT OF REGULATED WASTE, HAZARDOUS	MEGAGRAM
SAMPLING AND ANALYSIS FOR DISPOSAL AND/OR RECYCLING	UNIT

Separate payment will not be made for mobilizing, preparing periodic reports, or planning special handling and placement of regulated waste in a manner protective of human health and the environment. All costs associated with labor, equipment, and materials needed for special handling and placement of regulated waste shall be included in the applicable excavation pay items.

Separate payment will not be made for the development and implementation of the Site Specific HASP, including supply and operation of air quality monitoring equipment performed during execution of excavation, handling, stockpiling and transport of regulated wastes, but, all costs thereof shall be included in applicable excavation and disposal pay items.

Separate payment will not be made for the developing and implementation of the Material Handling Plan (MHP). Payment for preparation, implementation, monitoring and administration of the MHP, including

supervision, documentation, and monitoring performing during execution of excavation, handling, stockpiling and transport of Regulated Waste, shall be included in applicable excavation and disposal pay items.

Separate payment will not be made for Management of Regulated Waste, but all costs thereof shall be included in applicable excavation pay items.

Payment for dewatering of Regulated Waste will be made under the item "Dewatering Basins".

SECTION 206 - FOUNDATION AND BRIDGE EXCAVATION

206.02 Classification of Excavation.
THE FOLLOWING IS ADDED:

Foundation and bridge excavation shall also include the excavation of Regulated Waste as noted in the Rules of the Solid Waste Administration, NJDEP, in accordance with the rules and regulations of NJAC 7:26 and as noted on the environmental plan sheet.

206.07 Excavation.
THE FOLLOWING IS ADDED:

Excavation in areas of Regulated Waste, as depicted on Environmental Plans or as directed by the Engineer, shall be performed in accordance with Subsections 202.04 Management of Regulated Waste, 202.13 Off-site Management of Regulated Waste and 212.06.

206.11 Excess or Unusable Material.
REPLACE THE FIRST PARAGRAPH WITH THE FOLLOWING:

Excess excavated material from areas identified and reported as containing Regulated Waste shall be managed in accordance with Subsection 202.04 Management of Regulated Waste and 202.13 Off-Site Management of Regulated Waste.

Excavated material from area identified as Hazardous Waste shall be managed in accordance with Subsection 202.04 Management of Regulated Waste and 202.13 Off-Site Management of Regulated Waste, Hazardous.

206.12 Method of Measurement.

Foundation Excavation, Regulated Waste, which includes the handling, stockpiling, on-site transport of regulated waste shall be measured by the cubic meter. Off-site Management of Regulated Waste shall be in accordance with 202.13. Sampling and Analysis for Disposal and/or Recycling will be measured in accordance with 202.14.

206.13 Basis of Payment.
THE FOLLOWING PAY ITEM IS ADDED:

Pay Item	*Pay Unit*
FOUNDATION EXCAVATION, REGULATED WASTE	CUBIC METER

Separate payment will not be made for work conducted in Regulated Waste in accordance with subsection 202.04 but all cost thereof shall be included under the Pay Item "Foundation Excavation, Regulated Waste".

Payment for sampling and analysis for disposal and/or recycling of Regulated Waste will be made in accordance with Subsection 202.15.

Payment for off-site transport and disposal and/or recycling of Regulated Waste will be made in accordance with Subsection 202.15.

Separate payment will not be made for implementing Site Specific Health and Safety Plan requirements, and reporting requirements for working with regulated materials, and all associated costs shall be included in the applicable excavation pay item.

SECTION 207 – SUBSURFACE STRUCTURE EXCAVATION

207.03 Bedding Materials.
SUBSECTION HEADING IS CHANGED TO:

207.03 Bedding and Backfill Materials.

207.03 Bedding and Backfill Materials.
THE FOLLOWING IS ADDED:

Controlled Low Strength Material (CLSM) shall conform to Subsection 919.22

207.06 Backfilling.
A. Pipes and Culverts.
THE FOLLOWING IS ADDED AFTER THE FOURTH PARAGRAPH:

CLSM may be used as alternate backfill material when backfilling trenches for drainage pipe and utility conduit. Combining other backfill materials in the same trench as CLSM shall not be permitted. Mixing and placement of CLSM shall begin only when the ambient temperature is at least –1 °C. During placement, the CLSM mixture shall have a temperature of at least 5 °C and shall not be placed on frozen ground. The CLSM mixture shall be discharged directly from the truck into the trench to be filled with care taken to prevent the pipe from becoming displaced. After placement, the CLSM mixture shall be cured and protected to prevent damage from cold weather according to Subsection 405.14. CLSM shall not be used to replace pavement, base courses or drainage layers that form the structure of the roadway.

207.09 Basis of Payment.
THE THIRD AND FOURTH PAY ITEMS ARE CHANGED TO:

ROCK EXCAVATION, SUBSURFACE STRUCTURES	CUBIC METER
PIPE BEDDING, CLASS ___	CUBIC METER

SECTION 212 - SOIL EROSION AND SEDIMENT CONTROL

212.06 Soil Erosion and Sediment Control Measures.
J. Dewatering Basin.
THE FOLLOWING IS ADDED:

The Contractor shall control all storm and ground waters removed from excavations in areas of Regulated Waste and groundwater so as to capture all free product and meet discharge requirements for permitted discharge to dewatering basin, surface water body or storm sewer system as selected by the Contractor. Following use, the discharge basin shall be backfilled using soils excavated during construction of the basin.

THE FOLLOWING IS ADDED:

K. POLLUTION PREVENTION AND CONTROL PLAN

Description. This work consists of developing and implementing a Pollution Prevention and Control Plan (hereinafter referred to as PPC Plan) to prevent unpermitted discharge of contaminated storm water, ground water, sediments and/or free product during stormwater control, excavation and dewatering operations.

Construction Requirement. The Contractor shall prepare a PPC Plan detailing methods, personnel, equipment, and reporting requirements in preventing unpermitted discharge of contaminated sediment and water generated during stormwater control, excavation and dewatering operations. The PPC Plan shall comply with all Federal, state, and local laws, rules, and regulations relative to contaminated discharges. The Contractor shall submit the PPC plan to the Engineer for review and approval at least one month prior to beginning excavation.

The PPC Plan shall provide methods and equipment for collecting, pumping, treating, monitoring, and disposing liquids generated during storm water control, measures to prevent storm water run-on and runoff, dewatering of excavations, dewatering of sediments, decontaminating personnel and equipment, and storing fuels and chemicals. The PPC Plan shall detail water collection, treatment, monitoring, discharge activities, and reporting requirements. The PPC plan shall require that water collection, treatment, monitoring, and discharge activities, personnel and equipment, and relevant quantities shall be included in daily construction reports.

Water removed from excavations and decant water derived from contaminated soil/sediment shall be handled and treated such that when the water is discharged to the dewatering basin, it is done in accordance with all Federal, State and local regulations governing such discharges.

The Contractor shall maintain a PPC log of incidents and water collection, monitoring, and handling activities, and shall make the log available to the Engineer upon request. The PPC log shall note daily water removal, treatment and discharge volumes, effluent sampling activities and results, discharge or spill incidents, and sampling and reporting activities.

212.09 Method of Measurement.
THE FOLLOWING IS ADDED:

Development, preparation, and acceptance of the Contractor's PPC Plan will not be measured.

Implementation of the Contractor's PPC Plan will not be measured.

212.10 Basis of Payment.
THE FOLLOWING IS ADDED:

Pay Item	*Pay Unit*
OIL-WATER SEPARATOR	UNIT

The Oil-water separator shall include all costs associated with purchase, permitting, operation, maintenance, demobilization of equipment; monitoring and reporting; and disposal of wastes. No separate payment will be made for the disposal of oils and sediment collected in the oil-water separator.

Payment for dewatering will be made under the pay item "Dewatering Basin".

Separate payment will not be made for any work involved in adhering to the PPC plan and implementing the various provisions thereof.

Payment for development of the PPC plan will be made under the applicable excavation pay items.

DIVISION 400 - SURFACE COURSES

SECTION 404 – HOT MIX ASPHALT (HMA)

404.05 Plant Laboratory.

ITEM 23. OF THE FIFTH PARAGRAPH IS CHANGED TO:

23. Microcomputer and workstation requirements shall be according to Subsection 106.06.

404.06 Vehicles for Transporting HMA Mixtures.

THE ENTIRE SUBSECTION IS CHANGED TO:

The mixture shall be transported from the mixing plant to the Project in trucks equipped with tight, clean bodies, which may be lightly coated with a soap or lime solution, or other such non-petroleum-based release agent. Under no circumstance shall a petroleum-based product be used as a release agent.

The trucks shall be permanently equipped with an airfoil that is capable at any speed or under any weather conditions to deflect air over the tarp and to prevent air from going under the tarp. The airfoil will be affixed no more than 600 millimeters in front of the tarp roll and be at least as high as the top of the tarp roll.

Each truckload shall be covered immediately after loading at the plant with a waterproof tarpaulin of such size to protect the mixture from the weather. The tarpaulin shall be able to withstand normal handling and placement temperatures of up to 205 °C without endangering the structural integrity and serviceability of the fabric. The tarpaulin shall also comply with one of the following:

1. A heavyweight tarpaulin to completely drape the load. The heavyweight tarpaulin shall have a minimum weight of 0.61 kg/m^2 and shall be a minimum of 600 millimeters wider and 1.2 meters longer than the truck body. The heavyweight tarpaulin shall securely meet or overlap the top of the tailgate and be securely held in place so as to prevent air from lifting the tarp during transport.
2. A tarpaulin equipped with side and back flaps sufficient to lap down outside along the sides and rear of the truck bed a minimum of 300 millimeters. The tarpaulin shall be secured by tie downs at a maximum of 1.5 meter spacing along the sides and rear of the truck.

The truck bodies shall be insulated or heated as necessary, to ensure delivery of the mixture at the specified temperature. Any truck that: causes excessive segregation of the mixture by its suspension or other contributing factors; leaks; causes delays; does not have an airfoil; or does not have an approved tarpaulin shall be removed from the work until such conditions are corrected and the truck is presented for inspection to the Engineer. The Engineer may require that all vehicles for transporting HMA mixture to be used by the contractor be made available for inspection at the plant laboratory prior to any shipments of materials.

404.21 Surface Course Rideability Requirements.

For this Project, the no payment reduction provisions shall govern.

404.25 Method of Measurement.

THE SIXTH FULL PARAGRAPH FROM THE LAST IS CHANGED TO:

The basic asphalt price index will be the monthly asphalt price index published during the month of Advertisement.

THE EIGHTH AND NINTH PARAGRAPHS ARE CHANGED TO:

Sealing of Cracks in HMA surface course will be measured by the linear meter.

Sawing and sealing joints in HMA overlays will be measured by the linear meter. Sawing joints in base or intermediate course will be measured by the linear meter.

404.26 Basis of Payment.

THE NINTH AND THIRTEENTH PAY ITEMS IN THE FIRST PARAGRAPH ARE CHANGED TO:

SAWING JOINTS IN INTERMEDIATE OR BASE COURSE
CORE SAMPLES, HOT MIX ASPHALT

THE FOLLOWING PAY ITEM IS DELETED:

SEALING OF CRACKS AND JOINTS IN HOT MIX ASPHALT SURFACE COURSE

THE NINTH PAY ITEM IS CHANGED TO:

SAWING JOINTS IN INTERMEDIATE OR BASE COURSE	LINEAR METER

SECTION 405 – CONCRETE SURFACE COURSE

405.08 Mixing Concrete.

1. Mixing on the Project in Truck Mixers.

THIS FIRST SENTENCE IN THE FIFTEENTH PARAGRAPH IS CHANGED TO:

Each batch shall be mixed not less than 50 revolutions at the rate of rotation designated as mixing speed.

3. Transit Mixing.

THE NINTH PARAGRAPH IS CHANGED TO:

Mixing shall begin immediately following the complete charging of the drum and continue for not less than 50 revolutions of the drum at the mixing speed recommended by the manufacturer of the truck mixer. Upon completion of at least the minimum number of mixing revolutions at the plant, the speed of the drum shall be reduced to the agitation speed recommended by the manufacturer.

THE LAST PARAGRAPH IS CHANGED TO:

Transit mix concrete will be rejected for any of the following reasons:

a. If the concrete is not discharged within the specified time limit after loading all ingredients into the drum;
b. If the indicator on the counter shows that the instrument has been turned off or tampered with;
c. If the non-resettable total revolution counter shows more than 300 revolutions;
d. If water has been added while the truck mixer is en route to the Project. Two-way telephone or radio communication between the site of the placement of concrete and the batching plant shall be provided.

SECTION 406 – SUPERPAVE HOT MIX ASPHALT COURSES

406.13 Surface Course Rideability Requirements.

For this Project, the no payment reduction provisions shall govern.

DIVISION 500 - BRIDGES AND STRUCTURES

SECTION 501 - CONCRETE STRUCTURES

501.07 Forms.

7. Permanent Steel Bridge Deck Forms.

THE FIRST SENTENCE OF THE SECOND PARAGRAPH IS CHANGED TO:

The use of permanent steel bridge deck forms shall conform to the following:

SECTION 503 - STEEL STRUCTURES

503.18 Basis of Payment.

THE SECOND PARAGRAPH IS CHANGED TO:

Structural bearing assemblies shall include payment for furnishing all labor, materials, tools, equipment and incidentals, and all work involving furnishing, testing, and installing said bearing assemblies, complete and in place, as shown on the Working Drawings.

SECTION 508 - METAL BRIDGE RAILING AND FENCE

THE FOLLOWING IS ADDED:

Description.

This work shall consist of the furnishing and installation of 0.9-meter high ornamental iron fencing, and all hardware and appurtenances, on top of the retaining wall.

Materials.

Ornamental iron fencing shall be as manufactured by the following or an approved equal:

Monumental Iron Works by Master-Halco, 1704 Trimble Road, Edgewood, MD 21040
Item Name: St. Charles Ave. 3 rail fence with spear finial, 20 mm square tubular pickets, 2.5 m long rails, ball post caps and black color

OR

Metropolitan Fence, 1304 East Main Street, Waukesha, WI 53186
Item Name: Lexington Style fence with Majestic finials and black color

OR

Texas Iron Fence & Gate Company, 1807 North Business 287, Decatur, TX 76234
Item Name: Model 1 fence with welded construction, 15 mm round solid pickets, third rail mounted 225 mm below top rail and black color

Construction Requirements.

Ornamental iron fencing shall be installed in accordance with the manufacturer's recommendations. Working drawings shall be supplied by the Contractor and shall be furnished according to Subsection 105.04.

Before fabrication of Ornamental Iron Fencing, the Contractor shall submit complete working drawings to the Engineer and the Landscape and Urban Design unit for approval according to Subsection 105.04. Working drawings shall show precise mounting details.

Method of Measurement.

Ornamental iron fencing will be measured by the linear meter.

Basis of Payment.

Payment will be made under:

Pay Item	*Pay Unit*
ORNAMENTAL IRON FENCING, 0.9 M HIGH	LINEAR METER

SECTION 513 – SHEETING, TEMPORARY AND LEFT IN PLACE

513.01 Description.

THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

This work shall include the temporary sheeting used to construct the bridge abutments in accordance with construction staging scheme indicated on the plans.

SECTION 519 - PREFABRICATED MODULAR WALLS

519.01 Description.

THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

This work shall also include the application of a special surface finish and tinted color at the outboard face of the prefabricated modular wall and both sides of the wall parapet.

519.02 Materials.

THE FOLLOWING IS ADDED:

Special surface finish applicators shall have a minimum of five consecutive years of experience in textured/colored concrete construction. Furnish evidence to the satisfaction of the Engineer, that the proposed products have been successfully used in similar applications. Prototypes of the formliner pattern shall be submitted to the Engineer and a representative of the Landscape and Urban Design Unit prior to fabrication for review and approval.

The outboard face of the prefabricated modular wall and both sides of the wall parapet shall have a brick pattern and color tinting to match the brick pattern and color of Saint Mary's Roman Catholic Church, located at the intersection of Route 47/40 and Old Dutch Mill Road. The finish shall visually continue uninterrupted.

The color pigment added to the concrete shall not contain any fillers or admixtures which would be detrimental to the performance characteristics and physical properties of the cement concrete. The particle size and composition of the pigment shall provide a weather-resistant, maintenance-free color surface. Deliver the color pigment material in original, unopended containers clearly labeled with the manufacturer's name and batch number of the pigment material. The Contractor shall ensure that the grout pattern joints have the appearance of mortared joints including the "pointing" in the wall. Lay out the brick pattern such that the top edge of the pattern is located at the top elevation of the prefabricated modular wall and wall parapet.

Prior to fabrication of formliners required for the project, sample panels for each component, 1.5 meters by 1.5 meters minimum, shall be cast using actual job site materials and construction techniques. The final color and surface pattern are subject to approval by the Engineer and a representative of the Landscape and Urban Design Unit. The Contractor shall not begin placing any special surface treatments without written approval from the Engineer.

519.06 Basis of Payment.

THE FOLLOWING IS ADDED:

No additional payment will be made for the formlined and tinted prefabricated modular wall and wall parapet. The cost thereof will be included in the pay item "Retaining Wall Location Number 1."

No separate payment will be made for the wall parapet. The cost thereof will be included in the pay item "Retaining Wall Location Number 1."

****

Prefabricated Modular Wall Systems acceptable for use in the project are as follows:

DOUBLEWAL as manufactured by
The Doublewal Corporation
7 West Main Street
Plainsville, CT 06062
Telephone Number: 860-747-1627

T-WALL as manufactured by
The Neel Company
8328-D Tratford Lane
Springfield, VA 22152
Telephone Number: 703-913-7859

SECTION 520 - MECHANICALLY STABILIZED EARTH (MSE) WALLS

520.01 Description.

THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

This work shall also include the application of a special surface finish and tinted color at the outboard face of the mechanically stabilized earth wall and both sides of the wall parapet.

520.02 Materials.

THE FOLLOWING IS ADDED:

Special surface finish applicators shall have a minimum of five consecutive years of experience in textured/colored concrete construction. Furnish evidence to the satisfaction of the Engineer, that the proposed products have been successfully used in similar applications. Prototypes of the formliner pattern shall be submitted to the Engineer and a representative of the Landscape and Urban Design Unit prior to fabrication for review and approval.

The outboard face of the mechanically stabilized earth wall and both sides of the wall parapet shall have a brick pattern and color tinting to match the brick pattern and color of Saint Mary's Roman Catholic Church, located at the intersection of Route 47/40 and Old Dutch Mill Road. The finish shall visually continue uninterrupted.

The color pigment added to the concrete shall not contain any fillers or admixtures which would be detrimental to the performance characteristics and physical properties of the cement concrete. The particle size and composition of the pigment shall provide a weather-resistant, maintenance-free color surface. Deliver the color pigment material in original, unopended containers clearly labeled with the manufacturer's name and batch number of the pigment material. The Contractor shall ensure that the grout pattern joints have the appearance of mortared joints including

the "pointing" in the wall. Lay out the brick pattern such that the top edge of the pattern is located at the top elevation of the mechanically stabilized earth wall and wall parapet.

Prior to fabrication of formliners required for the project, sample panels for each component, 1.5 meters by 1.5 meters minimum, shall be cast using actual job site materials and construction techniques. The final color and surface pattern are subject to approval by the Engineer and a representative of the Landscape and Urban Design Unit. The Contractor shall not begin placing any special surface treatments without written approval from the Engineer.

520.06 Basis of Payment.

THE FOLLOWING IS ADDED:

No additional payment will be made for the formlined and tinted prefabricated mechanically stabilized earth wall and wall parapet. The cost thereof will be included in the pay item "Retaining Wall Location Number 1."

No separate payment will be made for the wall parapet. The cost thereof will be included in the pay item "Retaining Wall Location Number 1."

The acceptable MSE walls are as follows:

Reinforced Earth as manufactured by
Reinforced Earth Company
8614 Westwood Center Drive, Suite 1100
Vienna, VA 22182-2233
Telephone Number: 703-749-4325

Inter-Loc as manufactured by
Atlantic Concrete Products
8900 Old Route 13
P. O. Box 129
Tullytown, PA 19007
Telephone Number: 215-945-5600

Retained Earth as manufactured by
Foster Geotechnical
1372 Old Bridge Road, Suite 101
Woodbridge, VA 22192
Telephone Number: 703-499-9818

SSL MSE Plus Retaining Wall System as manufactured by
SSL
4740-E Scotts Valley Drive
Scotts Valley, CA 95066
Telephone Number: 831-430-9300

Isogrid Retaining Wall System as manufactured by
The Neel Company
8328-D Traford Lane
Springfield, VA 22152
Telephone Number: 703-913-7859

THE FOLLOWING SECTION IS ADDED:

SECTION 523 – HIGH PERFORMANCE CONCRETE

523.01 Description.

This work shall consist of the construction of portland cement concrete deck slabs with the use of High Performance Concrete (HPC). HPC is defined as concrete that meets special performance and uniformity requirements that cannot always be obtained by using conventional ingredients, normal mixing procedures and typical curing practices.

523.02 Materials.

Materials, admixtures and methods of construction not specifically covered in the plans and these Specifications shall conform to the AASHTO Standard Specifications for Highway Bridges and as stated herein. If the project is designed according to the AASHTO LRFD Bridge Design Specifications, conformance shall be to the AASHTO LRFD Bridge Construction Specifications and as stated herein.

In order to achieve the desired resistance to chloride penetration, an appropriate pozzalonic material; such as, silica fume, flyash or ground granulated blast furnace slag shall be provided in the mix design.

Pozzalonic material maximum percentage limitations that are stated in Subsection 914.02 and 919.18 may be waived for the development of HPC mix designs.

523.03 Mix Design and Fabrication.

1. **Fabrication Requirements.** For the construction of the HPC items of work, the HPC shall be fabricated in accordance with the requirements of Section 501 - or as stated within this Section.

Mix Design Verification. In the development of the HPC mix design, the following performance requirements, in accordance with the indicated test method, shall be achieved. A report to document these results shall be provided to the NJDOT Regional Materials Office. The Contractor shall obtain the results of these standard tests from an AASHTO Accredited testing agency, that is approved for Portland Cement concrete testing, at no cost to the Department.

Performance Characteristic	Standard Test Method	Performance Required
Scaling Resistance (x = visual rating of the surface after 50 cycles)	ASTM C 672	x = 3 max
Freeze-Thaw Durability (x = relative dynamic modulus of elasticity after 300 cycles)	AASHTO T 161 ASTM C 666 Proc. A	x = 80% minimum
Chloride Permeability 56 days (coulombs)	AASHTO T 277 ASTM C1202	1000 maximum
56 Day Compressive Strength (Verification Strength)	AASHTO T 22 ASTM C 39	37 MPa (5400 psi) minimum

Note: For the Scaling Resistance performance testing, as prescribed in the Standard Test Method, specimens shall be moist cured for 14 days and then air cured for 14 days.

a. If the compressive strength requirement has been achieved in 28 days, the strength requirement shall be considered acceptable. If the required compressive strength is not achieved in 28 days, the HPC sample shall be tested at 56 days.

b. If the chloride permeability requirement has been achieved in 28 days, the chloride permeability shall be considered acceptable. If the required chloride permeability is not achieved in 28 days, the HPC sample shall be tested at 56 days.

c. At least 90 calendar days prior to the planned start of the concrete placement, the mix design shall be submitted for approval and verification in accordance with Subsection 914.02. The submission shall include the results of the required Performance testing specified above.

d. In accordance with the above referenced AASHTO T277 test, at 28 and 56 day intervals, the Department will perform chloride permeability testing to document the quality of the HPC mix design and to verify the results submitted in the above referenced Report.

The Contractor shall submit four (4) additional cylindrical samples to the Department Laboratory, for performance of this testing. These samples shall be 100 millimeters (4 inches) in diameter and at least 200 millimeters (8 inches) in length. The test value shall be the result of the average value of tests on two (2) specimens for each mix design.

523.04 Production HPC.

1. As per the provisions of 501.12, Subpart 5., a plan of operation for placement of the HPC deck slab, shall be submitted for review and approval by the Engineer.

2. The Contractor is advised that curing of the HPC shall be performed in accordance with the provisions of Subsection 501.17. Furthermore, wet burlap, for the curing of the deck slab concrete, shall be placed within ten (10) minutes after the concrete is struck off. Also, upon completion of the 7 day wet curing period, the HPC deck slab shall be further cured according to the provisions of Subsection 405.14, Subpart 1. for an additional 7 days.

If it is anticipated that the ten (10) minute limitation will not be met, the concrete placement operation shall be stopped. A cold joint shall be formed and the Contractor shall submit a revised plan of operation for review and approval by the Engineer before resumption of the HPC placement.

3. The finishing machine equipment shall be set up so that the HPC is placed only 1.8 to 2.4 meters (6 to 8 feet) ahead of the machine.

4. To demonstrate that the Contractor can place, finish and cure the HPC, a trial HPC placement of a minimum of 4.6 cubic meters (6 cubic yards) of the HPC shall be placed at the Project site at a location that is acceptable to the Engineer.

The location shall not be a structural element that is to remain in place. The trial HPC shall be placed, finished and cured in accordance with these Specifications at least 7 calendar days prior to the start of HPC placement. After the initiation of final HPC placement, the trial HPC shall be removed. If the Engineer believes that there is sufficient knowledge that the HPC can be placed and cured according to these Specifications, then this requirement may be waived.

524.05 HPC Acceptance Requirements.

1. With the exception that compression testing may be conducted at 56 days, the requirements specified in Subsection 914.02 for control and acceptance testing of Class A concrete shall be adhered to in the fabrication of the HPC elements.

2. Acceptance testing performance measures shall consists of the following parameters:

Performance Characteristic	Standard Test Method	Performance Required
Percent Air Entrainment *		6.0 ± 1.5 (# 57 Aggregate) 6.0 ± 1.5 (# 67 Aggregate) 7.0 ± 1.5 (# 8 Aggregate)
Slump (millimeters) *		75 ± 25
Chloride Permeability ** 56 days (coulombs)	AASHTO T 277 ASTM C1202	2000 maximum
56 Day Compressive Strength *** (Retest Limit)	AASHTO T 22 ASTM C 39	30 MPa (4400 psi) minimum

*As per the guidance stated in Subsection 501.03, a Type F water-reducing, high range admixture will be permitted in accordance with Subsection 905.02 and Subsection 914.02, Subparts B and C. When a Type F admixture is used, the Slump and Air Content values for the HPC shall be as follows:

Slump: 150 ± 50 millimeters (6 ± 2 inches)
Air Content: increase both the target value and tolerance percentages by 0.5

** For chloride permeability testing, 4 additional cylinders shall be provided to the Department Laboratory. Two cylinders each from two randomly selected delivery trucks shall be taken for testing at 28 day and 56 day intervals.

*** For compressive strength testing, the Initial Sampling Rate for the HPC shall be 6/Lot.

3. The HPC shall be a Non-Pay-Adjustment Item. In accordance with the provisions of Subsection 914.02 F., the HPC shall be accepted for strength according to the requirements of a Class A concrete item.

4. A test for chloride permeability shall consist of two test specimens. The results of the two specimens shall be averaged to determine the test result. There will be two tests performed on each lot from samples taken from two randomly selected delivery trucks.

The lot is eligible for 100 percent payment provided that all test results are equal to or below 2000 coulombs. Whenever one or more individual test results exceed 2000 coulombs at 28 days, the lot shall be re-evaluated at the same testing rate at 56 days. If, upon testing at 56 days, one or more individual test results exceed 2000 coulombs, the Engineer may:

a. Require the Contractor to remove and replace the defective lot at no cost to the State,

b. Allow the Contractor to submit a plan, for approval, for corrective action to be performed at no cost to the State.

523.06 Method of Measurement.

Concrete in the various structures will not be measured and payment will be made for the quantity in the Proposal adjusted for Change Orders except as provided for in Subsection 109.01.

523.07 Basis of Payment.

Payment for HPC in the deck slab will be made under:

Pay Item	*Pay Unit*
CONCRETE IN SUPERSTRUCTURE, DECK SLABS - HPC	CUBIC METER

DIVISION 600 - INCIDENTAL CONSTRUCTION

SECTION 601 – UNDERDRAINS

601.06 Basis of Payment.

THE FOLLOWING IS ADDED:

Pay Item	*Pay Unit*
200 MM PERFORATED, CORRUGATED STEEL UNDERDRAIN PIPE	LINEAR METER

SECTION 602 – PIPES

602.03 Construction Requirements.
THE FOLLOWING IS ADDED:

Excavation associated with the construction of pipes in material that exhibits the characteristics of ID-27 hazardous contaminated soil, sediment or debris shall also be in accordance with Subsections 202.04 and 202.13.

Excavation associated with the construction of pipes shall be managed in accordance with Subsections 202.04 Management of Regulated Waste and 202.13 Off-site Management of Regulated Waste.

602.11 Basis of Payment.
THE FOLLOWING PAY ITEMS ARE DELETED:

___ X ___ MM REINFORCED CONCRETE CULVERT PIPE ARCH, CLASS ___	LINEAR METER
___ X ___ MM REINFORCED CONCRETE SEWER PIPE ARCH, CLASS ___	LINEAR METER

SECTION 603 - INLETS AND MANHOLES

603.01 Description.
THE FOLLOWING IS ADDED:

This work shall also include the construction of an outlet control structure as shown on the plans and details.

603.02 Materials.
THE FOLLOWING IS ADDED:

Structural Steel	917.10
Zinc Coating (Galvanizing)	917.12

603.12 Method of Measurement.
THE FOLLOWING IS ADDED:

Outlet control structure will be measured by the number of each.

603.13 Basis of Payment.
THE FOLLOWING IS ADDED:

Pay Item	*Pay Unit*
OUTLET CONTROL STRUCTURE	UNIT

SECTION 616 - SLOPE AND CHANNEL PROTECTION

616.01 Description.
THE FOLLOWING IS ADDED:

This work shall also include the construction of an outfall preformed scour hole as shown on the plans and details.

616.09 Basis of Payment.
THE FOLLOWING IS ADDED:

Pay Item	*Pay Unit*
PREFORMED SCOUR HOLE	SQUARE METER

SECTION 617 - TRAFFIC CONTROL

617.03 Traffic Control Devices.

3. **Illuminated Flashing Arrows.** The solar powered arrow boards approved for use on projects are:
   a. Work Area Protection – Arrowmaster Model WAAW–15-SB
   b. Solar Technology Inc. – Silent Sentinel
   c. Trafcon Industries Inc. – Model TC1-15S
   d. Protect-O-Flash Inc. – Model No. M-90 (LED bulbs only)
   e. TRACOM (Trailer Component Mfg., Inc.)

SECTION 618 - TRAFFIC STRIPES AND MARKINGS

618.01 Description.
THE FOLLOWING IS ADDED TO THIS SUBSECTION:

Removal of pavement reflectors and castings consists of the removal and disposal of existing raised pavement markers, including the lenses when still intact.

Removal and replacement of pavement reflector lenses consists of the removal of existing pavement reflector lenses and installing new mono–directional or bi–directional pavement reflector lenses.

618.10 Defective Stripes or Markings.
STEP 2 OF SECOND SUBPART 2 IN THE THIRD PARAGRAPH IS CHANGED TO:

Step 2: All retroreflectance measurements taken with a LTL2000 Retrometer will be made on a clean, dry surface.

618.12 Removal of Traffic Stripes or Traffic Markings.
SUBSECTION IS RENAMED AND CHANGED TO:

618.12 Removal and Replacement of Traffic Delineation Devices.

A. **Removal of Traffic Stripes, Markings, or Reflectors and Castings.** The Contractor shall remove all types of traffic stripes or traffic markings by methods that do not damage the integrity of the underlying pavement or adjacent pavement areas, and that do not cause gouging, or create ridges or grooves in the pavement that may result in compromising vehicular control. Obliterating stripes or markings by painting over them shall not be permitted.

Before starting removal operations, the Contractor shall demonstrate the proposed method to accomplish the complete removal of the reflectors and castings and the removal of approximately 95 percent of the stripe or marking without the removal of more than 2 millimeters of pavement thickness.

Area of removal includes the area of the stripe or marking plus 25 millimeters on all sides. Removal operations shall not be permitted until the method of removal has been approved.

Debris from the removal of traffic stripes and markings shall be disposed of according to Subsection 201.10.

Disposal of pavement reflectors and castings shall be in conformance with Subsection 201.10.

B. Removal and Replacement of Pavement Reflector Lenses. The Contractor shall remove existing pavement reflector lenses and install new mono-directional or bi-directional pavement reflector lenses within the limits of construction or as directed by the Engineer. The reflector adhesive used in the bonding of the reflector lenses to the casting shall be in conformance with Subsection 912.17.

The Contractor shall remove and replace pavement reflector lenses by methods that do not damage the underlying castings.

Disposal of pavement reflectors lenses shall be in conformance with Subsection 201.10.

618.14 Method of Measurement.

THE FOLLOWING IS ADDED TO THIS SUBSECTION:

Removal of pavement reflectors and castings will be measured by the number of units.
Removal and replacement of pavement reflector lenses will be measured by the number of units.

618.15 Basis of Payment.

THE FOLLOWING PAY ITEMS ARE ADDED:

Pay Item	*Pay Unit*
REMOVAL OF PAVEMENT REFLECTORS AND CASTINGS	UNIT
REMOVAL AND REPLACEMENT OF PAVEMENT REFLECTOR LENSES	UNIT

SECTION 622 - WATER, GAS, AND SANITARY SEWER LINES

622.02 Materials.

THE FOLLOWING IS ADDED:

Steel sleeve casing pipe shall be 305mm (12") outside diameter A-252 seamless steel (Grade 2) with welded joints.

622.03 Construction Requirements.

THE FOLLOWING IS ADDED:

Steel sleeve casing pipe to be installed by the open cut method. The steel sleeve casing shall be bituminous coated inside and out and shall be provided with concrete plugs at each end after installation.

622.04 Method of Measurement.

THE FOLLOWING IS ADDED:

Steel sleeve casing shall be measured by the linear meter.

622.05 Basis of Payment.

THE FOLLOWING IS ADDED:

Pay Item	*Pay Unit*
305 MM STEEL SLEEVE	LINEAR METER

THE FOLLOWING IS ADDED:

SIGN RELOCATION

Description.

This work shall consist of the relocation and permanent installation of the St. Mary's Church sign.

Construction Requirements.

The Contractor shall remove, protect and store sign. Existing concrete shall be removed from posts before sign is relocated to location as directed by the Engineer. The sign shall be set plumb and level with the same amount of the post exposed above ground as before the relocation. The relocated sign shall be set in concrete sufficient to insure its permanent installation. The top of this concrete shall be approximately 75 mm below the final grade.

Care shall be taken in excavating and relocating the sign and protecting it until it is permanently installed. Any damage done to the sign shall be repaired without additional compensation.

Method of Measurement.

Sign relocation will be measured by the number of units.

Basis of Payment.

Payment will be made under:

Pay Item	*Pay Unit*
SIGN RELOCATION	UNIT

THE FOLLOWING IS ADDED:

FLAG POLE RELOCATION

Description.

This work shall consist of the relocation and permanent installation of the St. Mary's Church flagpole.

Construction Requirements.

The Contractor shall remove, protect and store the flagpole. Existing concrete shall be removed from pole before flagpole is relocated to location as directed by the Engineer. The flagpole shall be set plumb and level with the same amount of the flagpole exposed above ground as before the relocation. The relocated flagpole shall be set in concrete sufficient to insure its permanent installation. The top of this concrete shall be approximately 75 mm below the final grade.

Care shall be taken in excavating and relocating the flagpole and protecting it until it is permanently installed. Any damage done to the flagpole shall be repaired without additional compensation.

Method of Measurement.

Flagpole relocation will be measured by the number of units.

Basis of Payment.

Payment will be made under:

Pay Item	*Pay Unit*
FLAGPOLE RELOCATION	UNIT

DIVISION 700 - ELECTRICAL

SECTION 702 - TRAFFIC SIGNALS

702.02 Materials and Equipment.

3. Pedestal Assemblies.
THE FOLLOWING IS ADDED:

Pedestal Assemblies shall consist of furnishing and installing one symbolic HAND/MAN LED (light emitting diode) pedestrian signal module (refer to Subsection 702.02, Subpart 13) into a pedestrian signal head housing, a pedestal pole with base and slip-fitter cap, miscellaneous fittings and hardware, and traffic signal cable from the terminal block of each face to the base of the standard.

4. Pedestrian Signal Assemblies.
THE FIRST PARAGRAPH IS CHANGED TO THE FOLLOWING:

a. Type W-1 shall consist of furnishing and installing one symbolic HAND/MAN LED (light emitting diode) pedestrian signal module (refer to Subsection 702.02, Subpart 13) into a pedestrian signal head housing complete with pole clamp mounting, miscellaneous fittings, the drilling of the standard, installing the grommet and traffic signal cable from the terminal block of each face to base of the standard.

8. Traffic Signal Assemblies.
THE FOLLOWING IS ADDED TO THIS SUBPART:

Traffic signal assemblies designated with the letters "RSA" shall consist of one L.E.D. "Red Signal Ahead" sign furnished and installed on a mast arm, complete mounting hardware, drilling the arm, installing the required grommet, and traffic signal cable from the terminal block of sign to the base of the traffic signal standard.

TRAFFIC SIGNAL ASSEMBLIES

Type	Nominal Arm Length (meters)	No. of Std. Faces	No. of Spider Assemblies	No. of Prog. Faces	No. of L.E.D. "Red Signal Ahead" Signs
9.1S-RSA	9.1	0	0	0	1

13. LED (Light Emitting Diode) Pedestrian Signal Module.
THE FOLLOWING IS ADDED:

The purpose of these specifications is to describe minimum acceptable requirements for an LED (Light Emitting Diode) Pedestrian Signal Module.

GENERAL - I

1-1 LED pedestrian signal modules shall conform to the following:

A. Manual on Uniform Traffic Control Devices (MUTCD).

Applicable provisions of the current specification of the Institute of Transportation Engineering (ITE) standard titled Vehicle Traffic Control Signal Heads – Part 2: Light Emitting Diode (LED) Vehicle Traffic Signal Modules (VTCSH Part 2).

FCC Title 47, Subpart B, Section 15 on the Emission of Electronic Noise.

The manufacturer must supply certification, which includes a copy of the test report by an independent technical laboratory as to the module compliance with ITE specifications (where it applies). The report shall also indicate that the tests were performed only after the modules received a thirty (30) minute operational warm-up period immediately preceding the tests.

CONSTRUCTION - II

2-1 The LED module shall replace the reflector, socket, gasket and lens assembly of the incandescent signal indication as specified in current New Jersey Department of Transportation Specification EBM-PS-1 "Specification for Adjustable Face Pedestrian Signal Heads Incandescent Type Legend – Walk – Don't Walk."

2-2 The LED module shall be watertight when properly mounted in the traffic signal housing and shall not allow the ingress of water into any section of the traffic signal assembly. A continuous soft rubber or silicone gasket completely surrounding the unit shall be provided with each unit.

2-3 The LEDs and required circuit components shall be encased in a rigid housing for protection in shipping, handling and installation.

2-4 The lens shall be smooth-surface, frosted (to prevent sun phantom) ultraviolet stabilized material. If polycarbonate material is used, the lenses must have a protective coating for scratch resistance.

2-5 AlInGaP (Aluminum Indium Gallium Phosphorus), Portland Orange (amber hand) LEDs shall be utilized. The substrate material may be either transparent or absorbing. The white LEDs shall be lunar white (white man).

2-6 The LED module shall display a SOLID Portland orange hand and SOLID lunar white man.

The LED module must be certified to have passed the Environmental Simulation Vibration Test (MIL-Std 883 Method 2007).

The LED module shall be made of UL94VO flame-retardant materials.

The colors of the LED module shall conform to chromaticity requirements of Section 8.04 and Figure 1 of the VTCSH Standard.

ELECTRICAL - III

3-1 The LED module shall connect directly to the line voltage, 120 volts nominal, and shall be able to operate over the voltage range of 80-130 volts AC. The variation in line voltage shall not cause the light intensity to vary by more than 10% over the entire operating voltage range.

3-2 The Portland Orange hand and lunar white man shall consume no more than 11 Watts.

3-3 The LEDs shall operate over the temperature range of -40 □C to +74 □C.

3-4 The forward current, as measured through each LED, shall not exceed 60% of the LED manufacture's maximum current rating when operating at 25 degrees C.

3-5 The LEDs shall be wired in series parallel strings. The failure of any one LED, and its associated string of LEDs, shall not cause the loss of more than 20% of the light output of the complete LED module.

3-6 The LEDs shall not emit visible light when subjected to a 120 volt AC, 4 milliamp leakage current from a NEMA solid state load switch (load switch in the off state).

Transient voltage suppression/protection shall be provided internal to the LED module to minimize the possibility of damage due to extreme over voltage.

3-8 The LED module shall be supplied with three conductors one (1) meter in length for each connection to the terminal board of the traffic signal indication. Each conductor shall be 600 volt, stranded No. 20 AWG minimum copper wire, rated for service at +105 degrees C, capable of withstanding all adverse effects of moisture, corrosive atmosphere and temperatures associated with the operation of the signal head. Spade lugs shall be installed on the ends of each conductor. The spade lugs must be capable of fitting under M4 screws.

INSTRUCTION AND GUARANTEES - IV

4-1 Upon request, one schematic wiring diagram and installation manual shall be provided with each LED module.

4-2 No changes or substitutions in these requirements will be accepted unless authorized in writing. Inquires regarding this specification shall be addressed to the Manager, Office of Traffic Signal and Safety Engineering, New Jersey Department of Transportation, 1035 Parkway Avenue, CN 613, Trenton, New Jersey 08625.

LED pedestrian signal modules shall be replaced or repaired if an LED pedestrian signal module fails to function as intended due to workmanship material defects within the first 60 months from the date of delivery.

4-4 The company agrees upon the request of the Manager, Office of Traffic Signal and Safety Engineering to deliver to the Office, a sample of the LED module to be supplied in compliance with these specifications for test before acceptance. After completion of the test, the sample shall be returned.

702.05 Assumption of Maintenance.
THE FOLLOWING IS ADDED:

It is Department policy for a completed traffic signal system to have its signal heads unbagged and placed into flash mode for a maximum of 5 days prior to full activation of the traffic signal system. During the flash mode period, the contractor is still responsible for the traffic signal system until assumption of maintenance by the Department.

702.07 Basis of Payment.
THE FOLLOWING IS ADDED:

Separate payment will not be made for placing the traffic signal system into flash mode prior to full activation and assumption of maintenance by the Department. All cost thereof shall be included in the price bid for the Traffic Controller Assembly Turn-On item.

SECTION 703 – HIGHWAY LIGHTING

703.02 Materials and Equipment.
THE FOLLOWING IS ADDED:

Lighting Assemblies, Type L-E-7.9-X shall consist of an offset type luminaire with an appropriate slip-fitter mounting adapter that shall have the capability of being installed on a traffic signal standard, "Type KE", cable connectors (fused and/or nonfused) and two No. 10 AWG color-coded wires extending from the ballast terminals of each fixture to the distribution wire in the base of the traffic signal or adjacent junction box.

SECTION 706 - INTELLIGENT TRANSPORTATION SERVICES FACILITIES

706.01 Description.
THE FOLLOWING SUBSYSTEM COMPONENTS SHALL BE ADDED TO THIS SUBSECTION:

Variable Message Signs

706.02 Materials and Equipment.
Controller Assembly.

The Controller Assemblies, 8 Phase, Type CL shall comply with EBM-TSC-8CL with the following modifications:

All references to NJDOT specifications EBM-CL-1 AND EBM-CL-2 are deleted.

THE FOLLOWING IS ADDED:

All controller cabinets utilized in the pay item "CONTROLLER ASSEMBLIES, 8 PHASE, TYPE CL" shall be mounted on a 381mm aluminum skirt. The 381mm aluminum skirt shall be of the same manufacturer as of the controller cabinet.

Controller Assemblies, 8 Phase, Type CL shall also include a battery backup unit. The battery backup unit shall conform to the following criteria's:

All interconnecting harnesses shall be heavy duty with military type connectors.
The battery backup unit shall be capable of running the intersection on flash for minimum of 2.7 hours.
The battery backup unit shall be warranted for a minimum of 2 years.
The battery backup unit shall be either an Online Power Signal Saver IPC System, Clary SP 1000 Traffic UPS System or approved equal.

The battery backup unit shall be shelf-mounted and the battery pack shall be hinged mounted on the side wall of the controller cabinet as directed by the Engineer.

The Contractor shall submit catalog cuts and provide a fully wired cabinet for review and acceptance depicting placement of a fully equipped controller cabinet with battery backup equipment before final approval is given to proceed.

The Contractor shall provide a parts list, wiring diagram, and cabinet schematic in a waterproof pouch inside the cabinet door.

THE FOLLOWING IS DELETED:

Subsections 5 and 6 are deleted.

The last sentence of subsection 10-1 is deleted.

Subsection 11 shall be modified to read as follows:
The controller unit communications module shall have the capability of downloading all of the data via the on-street master to the operator. The data that shall be available for downloading is specified in subsection 10. During the uploading operation, the normal interconnected operation may be suspended.

Subsection 18 is deleted.

The Controller Assembly, Type Master (closed loop system on-street master) shall comply with EBM-OSM-1, with the following modifications:

Subsections 1-3.D and 1-4 are deleted.

The first and last sentences of Subsection 5-4 are deleted.

Subsection 6 is deleted.

Subsection 10 is deleted.

Subsections 12-1.B and 12-1.D are deleted.

Subsection 13-3 is deleted.

Subsections 14, 15 and 19 are deleted.

Subsection 21 is added:

CABINET-AUXILIARY EQUIPMENT – XX1

The cabinet and auxiliary equipment shall be housed in the local controller cabinet.

The closed loop on street master is included in the cost of the controller assembly and will not be paid separately.

706.03 Construction Requirements.

Camera Assembly. The Camera assembly furnished shall meet all requirements of NJDOT EBM-CCTV-COLOR "METRIC SPECIFICATIONS FOR CCTV ASSEMBLY".

Each camera assembly shall conform to the current version of EBM-CCTV-COLOR with the following additions:

The camera assembly includes cables between the equipment in the NEMA enclosure and the camera and PTZ drive equipment. These cables shall comply with the equipment manufacturer's recommendations for outdoor installations. At the camera end, each cable shall be equipped with a connector and strain relief.

Plan details of above-described changes are included in the Electrical Details sections of the Plans.

The camera standard is described in Section (706.03) of these Special Provisions.

Subsection 6-2, NEMA enclosure, is entirely replaced by the following:

NEMA Enclosure:

The Contractor shall furnish and install an aluminum NEMA 3R enclosure attached to the camera standard, as shown in the Plans. The cabinet shall be approximately 660 millimeters high, 430 millimeters wide, and 380 millimeters deep. It shall have louvers with replaceable air filters on each side, low on one side and high on the other. The cabinet shall have a sunshield on the top and front.

The cabinet shall be equipped with a lock equivalent to a CCL 2-NJIVHS. One key shall be supplied with each lock. The key shall be removable in the locked position only.

The cabinet shall be mounted at right angles to traffic on the south side of the pole.

All cables shall enter the cabinet through the back. All cables shall enter the cabinet by 51 millimeters threaded conduit passing through the back of the cabinet and through the wall the camera pole as shown on the Plans. The fittings used to make these connections are all part of the camera assembly and shall not be paid separately.

The enclosure shall include a power distribution panel containing a 20 amp main breaker, a surge protector installed on the load side of the main breaker, and three 15-amp breakers, each for a separate branch circuit within the cabinet. One of the branches shall serve only the GFCI receptacle. A second branch shall power sensitive

electronics – the camera(s), and the control/receiver. The third branch shall power all other equipment in the cabinet or atop the pole. The surge protector shall be as described in these Provisional Specifications. The cabinet layout shall be such that the main breaker and surge protector are as close as possible to the point where the power cables enter the cabinet.

The enclosure also includes the following equipment mounted inside the cabinet:

A fiber optic termination patch panel, as described in EBM-FOC-PP-1.

A fiber optic termination cable that shall be fusion spliced to the designated fiber in the fiber optic termination cable. This item is included in the cost of the termination cable to the cabinet and will not be paid separately.

The control/receiver.

A control panel that shall permit manual local PTZ control of the camera and a 3dB-video signal tap to permit connection of a local monitor.

A thermostat-controlled exhaust fan that shall engage at 35 degrees Celsius and turn off at 30 degrees Celsius. The fan shall be positioned in front of the upper set of louvers.

A part list, wiring diagram, and schematic of the cabinet in a waterproof pouch inside the cabinet door.

Items in the above list not designated for separate payment are part of the camera assembly.

Surge Protector:

The service panel shall be protected against transient surges with a panel mounted transient voltage surge suppressor. The surge suppression device shall be rated at 120 Volts for close nipple mounting on the panel. The surge suppression device shall be housed in a NEMA 12 enclosure inside the remote HAR cabinet.

The total unit as installed must be UL 1449 listed, not merely the components or modules, and bear CSA certification. Provide at least a five year standard warranty for the transient voltage surge suppressor. Provide a surge suppression device to protect all modes, normal and common, and have bi-directional, positive and negative impulse protection. Provide a surge suppression with a hybrid parallel circuit design; series elements are not to be utilized. Provide a surge suppression that will not short or crowbar the power load, which would result in an interruption to the load.

The surge suppression device must exhibit the following characteristics with a six-inch lead length:

Voltage, nominal operating: 120V, 1ϕ, 2 W and ground connection
Voltage, maximum operating: 150 Vrms
Response Time: $\leq$ 1 nanosecond
Peak Let-Through voltage: 380 Line to Neutral based on Category B3/C1,
ANSI/IEEEC62.41 1991 and C62.45 1992
Total peak surge current: >50,000 amps based on an 8 x 20
Microsecond waveform, single mpulse
Total Energy Dissipation: >1000 Joules

Mount the unit on the panel box keeping the leads between the device and the breaker as short as possible, preferably less than eight inches. Locate the breaker used for installation close to the neutral bar to minimize the neutral lead length. Install devices in accordance with listing, and in accordance with manufacturer's written installation instructions.

In the first paragraph of Section VII, second sentence, the phrase "contain an RS 232 to RS 422

converter which will" is replaced by "be a minimum of 1.83 meters long and shall".

A single prototype assembly must pass the requirements of Section VIII.

Controller Assemblies, 8 Phase, Type CL.
The provisions of Section 702.03 shall apply.

Variable Message Sign. The VMS will have the following minimum features and capabilities:

1. Display Characteristics

Provide a sign with either character matrix, line matrix, or full matrix capability, using aluminum indium gallium phosphide (AlInGaP) LED technology. Provide amber LEDs with wavelength of 589 to 592 nm. Provide a sign capable of displaying three lines of text, with 8 characters per line, using a font at least 18 inches in height. Each character in the font shall consist of a 5-pixel wide by 7-pixel high matrix of equally spaced pixels. A non-illuminated space of at least 2.5 inches must be provided between the pixels of one character and the pixels of each neighboring character, to provide adequate character spacing.

Provide a sign which is clearly visible and legible from 1000 feet using 18-inch characters, under direct sunlight, day and night conditions, for an observer with 20/20 vision. Provide sign with a full visibility and legibility within a cone of visibility of at least 15 degrees.

Equip the sign with at least one photocell and a photosensor controller to regulate intensity based on ambient light conditions, including overbright condition. Provide a photosensor controller capable of determining the illumination setting of the sign based on the following criteria:

Night setting when the night threshold is not exceeded. Provide that the night threshold is variable from 0 to 200 lux in increments of 10 lux, with a default of 100 lux.

Daylight setting when the night threshold is exceeded, and the overbright threshold is not exceeded.

Overbright setting when the overbright threshold is exceeded. Set an overbright threshold level such that the sign shall remain legible under washout conditions.

Provide at least three intensity levels, such that the following luminance is provided, based on the LED manufacturer's performance specifications, when all of the pixels are lit:

For night setting, a variable intensity between 20 and 200 candela per square meter of pixel array, with at least three (3) levels of intensity within that range.

For daylight setting, at least 1500 candela per square meter of pixel array.

For overbright setting, at least 2500 candela per square meter of array.

Additional intensity levels, additional photosensors, or a continuously variable intensity control are acceptable, provided the above criteria are satisfied.

2. Trailer

Provide a 2-wheel trailer structurally adequate to serve as both a carrier and operating platform for all components of the complete unit, including sign face and assembly, batteries, solar panels, fuel cells (if applicable), onboard computer, cellular phone, and all related equipment. Provide a trailer that meets all state and federal requirements for a towed vehicle. Construct the base structure of structural rectangular steel tubing. Join all tubing by continuous bead welds.

Provide axle and suspension system for the trailer rated at 6000 pounds minimum. Provide wheels and 4-ply tires a minimum of 15 inches in diameter, rated for towing at 65 MPH. Install a steel fender over each wheel.

Provide a lighting system for the trailer, to include tail lights, stop lights, turn signals, license plate light, and reflectors. Install a trailer electrical cable and connector compatible with towing vehicles. Install a 2-inch ball-type trailer hitch with double safety chains.

Equip the sign trailer with adjustable jacks on all four corners to level the sign and provide stability in winds up to 70 MPH.

Support the sign panel on a telescoping upright member equipped with hydraulic power to permit the raising of the sign for operation and lowering of the sign for transport. Enable sign face to be rotated at least 270 degrees and locked into any angle on the telescoping member. Provide the bottom of the sign with at least six feet of clearance above the ground when in raised position.

3. Onboard Control and Communications

Provide an on-board dedicated computer with the following features and capabilities:

Solid state design.

Keypad or keyboard permitting on-site message review and editing.

Display screen upon which messages can be reviewed and edited.

Capability to program up to six (6) messages into message sequences, with variable timing between messages of 1/4 second to ten (10) seconds.

A scheduling mode capable of scheduling at least five (5) different message sequences for a 24-hour period.

Storage capacity for at least 100 preset messages, at least 100 user-defined messages, and at least 100 message sequences.

Password protection.

On-screen display of current battery charge level.

Provide a telephone line and modem capable of allowing communication between the sign and the system control computer.

Provide that the variable message sign will also remain capable of remote operation from any telephone, using the unit's standard DTMF tone control over dial-up lines, without the use of system control software.

Install on-board computer, telephone, and modem in a weather-resistant, shock-resistant lockable control box. Equip box with light for nighttime use. Provide the Department with 2 sets of keys to the control box.

4. Power System

Provide 120V commercial electrical service power supply and standard AC plug.

Install each variable message sign on the 10' x 14' reinforced concrete foundation as indicated on the Plans. Position the variable message sign face to face oncoming traffic, rotated slightly toward the road, so that the sign has optimal visibility based on each sign location and the roadway approach characteristics. Position the solar panels for optimal orientation relative to the sun.

Secure each sign to 10' x 14' reinforced concrete foundation as indicated on the Plans. Remove tires from trailer after installation to prevent vandalism, and deliver tires to a Department location as instructed by the Engineer.

Variable Message Sign Foundation

The foundation shall be constructed as shown on the plans.

Camera Standard

This Item shall be furnishing and installing a steel camera standard with a height of 12.2 m.

The standard shall be in accordance with the 1994 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals." Minimum Loading requirements shall be based on an isotach wind velocity for the area of installation according to 1994 AASHTO isotach wind chart with a 1.3 gust factor. Calculations and detailed drawings shall be submitted demonstrating compliance with the AASHTO specification.

FABRICATOR: The Fabricator shall be certified under Category I, "Conventional Steel Structures" as set forth by the American Institute of Steel Construction Quality Certification Program. Proof of this certification will be required with shop drawing submittal to ensure that the fabricator has the personnel, organization, experience, procedures, knowledge, equipment, capability and commitment to fabricate quality standard structures.

All welding shall be in accordance with Sections 1 through 8 of the American Welding Society (AWS) D1.1 Structural Welding Code. Tackers and welders shall be qualified in accordance with the code. Tube longitudinal seam welds shall be free of cracks and excessive undercut, performed with automatic processes, and be visually inspected. Longitudinal welds suspected to contain defects shall be magnetic particle inspected. All circumferential butt-welded standard and arm splices shall be ultrasonically or radiographically inspected.

All materials and products shall be manufactured in the United States of America, and comply with ASTM or AASHTO specifications. Mill certifications shall be supplied as proof of compliance with the specifications.

The standard shall be designed to support the specified camera and accessories. Close consideration must be given to the effective projected area of the complete lowering system and camera equipment to be mounted on the standard along with the weight when designing the standard to meet the specified deflection performance criteria. The standard top deflection shall not exceed one inch in a 30-mph (non-gust) wind. The calculations shall include a standard, base plate, and anchor bolt analysis. The standard calculations shall be analyzed at the standard base, at 5-

ft. standard intervals/segments and at any other critical standard section. At each of these locations, the following information shall be given:

The standard's diameter, thickness, section modulus, moment of inertia, and cross sectional area.

The centroid, weight, projected area, drag coefficient, velocity pressure, and wind force of each standard segment.

The axial force, shear force, primary moment, total moment, axial stress, bending stress, allowable axial stress, allowable bending stress, and combined stress ratio (CSR).

The standard's angular and linear deflection.

The standard shaft shall be one piece construction up to 152400mm in length, and shall conform to ASTM A595 Grade A with a minimum yield strength of 55 ksi or ASTM A572 with a minimum yield strength of 65 ksi. Standards greater than 15240mm in length shall be of two piece construction. The shaft shall be round or 16 sided with a four inch corner radius, have a constant linear taper of 0.03556mm/0.3048m (0.14 in/ft), and contain only one longitudinal seam weld. Circumferential welded tube butt splices and laminated tubes are not permitted. Longitudinal seam welds within 1524mm of complete penetration standard to base plate welds shall be complete penetration welds. The shaft shall be hot dip galvanized per the requirements of the contract documents.

The hand hole opening shall be reinforced with a minimum 50mm wide hot rolled steel rim. The nominal outside dimension is 1524mm x 6858mm.

Base plates shall conform to ASTM A36 or A572 Grade 42. Plates shall be integrally welded to the tubes with a telescopic welded joint or a full penetration butt weld with backup bar. Plates shall be hot dip galvanized per the requirements of the contract documents.

Anchor bolts shall conform to the requirements NJDOT Standard Specifications Section 906.01. Each anchor bolt shall be supplied with four hex nuts, one lock washer and one flat washer. The strength of the nuts shall equal or exceed the proof load of the bolts.

Ground wire shall be bare, solid #6 AWG grounding conductor.

Ground rod shall conform to NJDOT Standard Specifications Section 906.02.

The standard shall be installed plumb on the concrete foundation with leveling nuts.

The standard shall be bonded to ground in accordance with NJDOT Standard Specifications Section 906.02.

Camera Foundation

The camera foundation shall be in accordance with the 1994 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals." Minimum Loading requirements shall be based on an isotach wind velocity for the area of installation according to 1994 AASHTO isotach wind chart with a 1.3 gust factor. Calculations and detailed drawings shall be submitted demonstrating compliance with the AASHTO specification. The foundations shall be designed to support the specified camera accessories and standard.

Portland cement concrete shall conform to Section 914. Other materials shall conform to the following subsections:

Aggregate for Coarse Aggregate bed 901.03
Mortar and Grout 914.03
Reinforcement Steel 915.01

Anchor bolts shall conform to the requirements NJDOT Standard Specifications Section 906.01. Each anchor bolt shall be supplied with four hex nuts, one lock washer and one flat washer. The strength of the nuts shall equal or exceed the proof load of the bolts.

Excavation shall be according to Subsection 207.04. Backfilling shall be according to 207.06.

Anchor bolts shall be installed to match the Camera Standard bolt pattern.

Concrete construction shall be according to Subsections 501.11 and 501.17.

Single Mode, Fiber Optic Cable and Fiber Optic Termination Cable

The fiber optic cable furnished shall meet all requirements of NJDOT EBM-FOC-SMLTSJ-1 "METRIC SPECIFICATIONS FOR SINGLE MODE, LOOSE TUBE, SINGLE JACKET FIBER OPTIC CABLE". The fiber optic termination cable furnished shall meet all requirements of NJDOT EBM-FOC-SMLTT-1 "METRIC SPECIFICATIONS FOR SINGLE MODE, LOOSE TUBE, TERMINATION (FIBER OPTIC CABLE)".

ST Connectors shall be furnished on both ends of the fiber optic cable for connection to the controllers. The fiber optic cable shall contain six fibers.

Quality Assurance.

Personnel involved in the installation and termination of the fiber optic cable shall meet the following minimum requirements:

Three years experience in the installation of fiber optic cables, including splicing, terminating, and testing of multi-mode fibers.

Three networks where fiber optic cables are installed in outdoor conduits, and the networks have been in continuous satisfactory operation for at least two years.

The Contractor shall submit to the Engineer documentation indicating the qualifications and experience of the personnel to be involved in the installation and termination of the fiber optic cables. Said documentation shall include names, addresses, and telephone numbers of the three network owners, who may be contacted by NJDOT regarding these installations. No fiber optic cable shall be installed until the installation personnel have been approved by the Engineer in accordance with the minimum requirements specified above.

The contractor shall perform testing of each fiber optic cable system in accordance with this section. These tests shall be made in the presence of and in cooperation with the Engineer and the designated communication and electronics personnel of NJDOT. The Contractor shall furnish all test equipment, perform the tests, and document the test results. When the tests are completed, whether successful or not, the test results shall be furnished to the Engineer.

Each reel of fiber optic cable shall be accompanied by the manufacturer's test data showing conformance to the requirements specified herein. Prior to installation, each optical fiber in the cable shall be tested on the reel from one end with and OTDR compatible with wavelength and fiber type with recorder and accessories to confirm manufacturer's test data. Testing shall check for continuity, length, anomalies, and approximate attenuation, in accordance with industry standards. Each measurement will be recorded. In the event that a meaningful measurement cannot be made from one end, it shall be performed from the opposite end of that fiber. Following installation, each optical fiber in the cable, including connectors, shall be tested in accordance with the requirements specified above.

2. Packaging Requirements – Cable on Reels

Each reel of fiber optic cable shall be permanently identified with a label listing, but not be limited to, the following information:

Cable type and number
Gross weight
Cable length
Job order number
Date of manufacturing
Date of factory

Each reel shall be accompanied by a data sheet containing the factory test results for each fiber in the cable. All data sheets shall be submitted to the engineer for review and approval prior to any installation. This review shall be completed within 15 days of receipt of material. The ends of the fiber optic cable on reel shall be protected with caps and accessible for testing before installation. If damage to cables is suspected at any time, the Engineer may request a retest of all suspected cable, at the Contractor's expense, within 48 hours of notification.

All cable, prior to installation, shall be stored to the manufacturer's recommendations.

3. Execution

The Fiber Optic Cables shall be installed as per the supplied documentation. The Contractor shall comply with all cable manufacturer installation procedures, unless otherwise specified in this document, and shall use the best workmanship during the installation. At no time shall any cable, buffer tube or fiber be subjected

to a bend radius less than 15 times its outer jacket diameter. All pulling procedures shall be submitted for review and approval by the Engineer prior to installation. This review will be completed within 30 days of receipt of material.

No splices, cable shall be installed as one continuous length.

The location and installation of fiber optic cable shall comply with all applicable sections of the National Electric Safety Code.

Service Loops – Manholes: All cables running through a manhole shall be properly secured to the walls of the manhole, and shall not interfere with, or be interfered by, any other cable or objects. Installed cable shall in no way hinder or impair the maintenance of the manhole.

Each cable shall be clearly and permanently labeled with its identification number near the duct opening, as it enters and leaves each manhole, and/or its service loop if one exists. The identification number shall match the specified cable ID. Each fiber optic cable shall be clearly and permanently tagged with "Traffic System – Fiber Optic Communication Cable", and each copper cable tagged with "Traffic System – Copper Communication Cable" in a similar manner.

The fiber optic and copper cables shall have service loops contained within manholes as per the supplied documentation. All fiber optic cable service loops shall be clearly labeled with "Fiber Optic Cable – Do NOT Mishandle". Each service loop shall be securely mounted to the ceiling of the manhole in such a way as to prevent unnecessary handling.

Service Loops: All service loops shall comply with the minimum bend radius for that cable, buffer tube or fiber. All service loops shall use loop rings, brackets or similar methods to ensure loop radius integrity. All service loops shall be placed in out-of-the-way locations, but shall be accessible with minimal effort. Service loops shall maintain a minimum bend radius of 15 times the outer diameter of the cable, unless otherwise specified. Where multiple cable service loops are required at the same location, each cable shall be service looped and secured separately. Thirty (30) feet of fiber optic cable shall be looped in the manhole designated by the Engineer.

Communication Cable, 6 conductor

The Communication Cable furnished shall be Outside plant suitable for aerial and duct installation with the following specifications

Configuration: 3 pair twisted (6conductor)
Conductor: 19 AWG Solid copper conductor
Insulation: Polyethylene 300 volt rated
Shield: Copper tape under Jacket
Jacket Black Polyethylene

The cable shall be installed as indicated on the plans and in accordance with NJDOT Standard Specifications Section 701.

706.04 Testing.

Camera Assembly.

Shall be in accordance with EBM-CCTV-COLOR and as directed here in. Prior to purchasing the camera control/receivers, the Contractor shall arrange a demonstration of the proposed camera control/receiver working with the CCTV computer and the CCTV computer software. The proposed control/receiver shall be in the same room with the CCTV computer and be connected to it by an EIA RS-232 cable. The Contractor shall demonstrate that the camera control/receiver and CCTV commute work reliably together and offer all the control features required by these Provisional Specifications. Only after the state approves the control/receiver based on this demonstration shall the Contractor purchase and install the camera control/receivers.

Single Mode Fiber Optic Cable and Fiber Optic Termination Cable.

Each reel of fiber optic cable shall be accompanied by the manufacturer's test data showing conformance to the requirements specified herein. Prior to installation, each optical fiber in the cable shall be tested on the reel from one end with an OTDR compatible with wavelength and fiber type, with recorder and accessories to confirm manufacturer's test data. Testing shall check for continuity, length, anomalies, and approximate attenuation, in accordance with industry standards. Each measurement will be recorded. In the event that a meaningful measurement cannot be made from one end, it shall be performed from the opposite end of that fiber.

Following installation, each optical fiber in the cable, including connectors, shall be tested in accordance with the requirements specified above. The end-to-end attenuation on all fiber links (with connectors) between each camera assembly cabinet and the auxiliary termination cabinet shall not exceed 6 dB at 820-nm wavelength.

706.05 Method of Measurement.

Camera assembly will be measured by the number of units.

Variable message sign will be measured by the number of units.

Single mode fiber optic cable will be measured by the linear meter.

Communication cable 6 conductor will be measured by the linear meter.

Variable message sign foundation will be measured by the number of units

Camera standard will be measured by the number of units.

Camera foundation will be measured by the number of units.

The Camera Assembly (or Camera Assembly, Roadside) includes the camera, camera enclosure, pan-tilt unit, control/receiver, NEMA enclosure, cables between the camera enclosure and the NEMA enclosure, connection to power, communication and ground, labor, testing, warranty, and installation. The Camera Assembly will be measured by the number of units.

Controller Assemblies, 8 Phase (CL) includes the Closed loop system on street master, battery backup unit, all cables, panels and other incidental items required to meet the specifications. The Controller Assemblies, 8 Phase (CL) will be measured by the number of units.

Single Mode Fiber Optic Termination Cable will be measured by the linear meter.

706.06 Basis of Payment.

Payment will be made under:

Pay Item	*Pay Unit*
CAMERA ASSEMBLY	UNIT
VARIABLE MESSAGE SIGN	UNIT
SINGLE MODE, FIBER OPTIC CABLE	LINEAR METER
COMMUNICATION CABLE, 6 CONDUCTOR	LINEAR METER.
VARIABLE MESSAGE SIGN FOUNDATION	UNIT
CAMERA STANDARD	UNIT
CAMERA FOUNDATION	UNIT
CONTROLLER ASSEMBLIES, 8 PHASE (CL)	UNIT
SINGLE MODE, FIBER OPTIC TERMINATION CABLE	LINEAR METER

DIVISION 800 – LANDSCAPING

SECTION 808 - FERTILIZING AND SEEDING

808.05 Basis of Payment.

THE SECOND PARAGRAPH IS CHANGED TO:

Payment will not be made for areas of fertilizing and seeding disturbed by Construction Operations, beyond the prescribed grading limits in islands and medians, and between prescribed grading limits and the right-of-way line, except as follows:

a 3.0 meter work strip from the toe of slope and a 4.5 meter strip from the top of slope or adjacent to drainage ditches constructed under this Contract.

THE FOLLOWING IS ADDED:

TREE PROTECTION

Description.

This work shall consist of the furnishing, placing and removal of 1.2 meter high chain-link fence for the protection of existing vegetation.

Materials.

Materials shall conform to the following subsections:

Chain-Link Fence.....907.02

Construction Requirements.

Before construction begins, the chain-link fence shall be placed around the existing vegetation, beyond the outer edge of the foliage line (drip line). The fence posts shall be spaced a maximum of 3.6 meters on center and driven into the soil deep enough to provide the necessary support for the chain-link fence. The chain-link fence shall be maintained in good order and left in place until construction is complete. No work access, storage of materials, field offices or any other use of tree protection zones shall be permitted. The chain-link fence shall be removed at the completion of the project.

Method of Measurement.

Tree Protection will be measured by the unit.

Basis of Payment.

Payment will be made under:

Pay Item	*Pay Unit*
TREE PROTECTION	UNIT

DIVISION 900 - MATERIALS

SECTION 902 - BEAM GUIDE RAIL

902.02 Posts, Timber and Routed Timber Spacers, and Recycled / Synthetic Spacers.
The approved manufacturers are Lifetime Lumber and Mondo Polymer Technologies, Polylumber.

SECTION 903 – HOT MIX ASPHALT

903.01 Composition of Mixtures.
For this Project, the 26 to 50 percent RAP requirements shall govern.

SECTION 909 – LANDSCAPING MATERIALS

909.10 Topsoil.

A. Unacceptable Topsoil Sources.
ITEM 1. IS CHANGED TO:

1. Soils having less than 4.1 pH value, or greater than 8.0 pH value.

SECTION 912 - PAINTS, COATINGS, AND MARKINGS

912.10 Pavements Stripes or Markings.

C. Thermoplastic.
THE SECOND AND THIRD SUBPARTS ARE CHANGED TO:

2. For white, the composition of the mixture shall be as follows:

Component	**Percent by weight**
Resin/Binder	22-26 percent
Glass Beads (pre-mix)	30 percent minimum
WhitePigment	10 percent minimum
Calcium Carbonate and Inert Fillers (shall not contain silica other than as glass beads)	34-38 percent

3. Only yellow non-lead formulas shall be used, the composition of the mixture shall be as follows:

Component	**Percent by weight**
Resin/Binder	22-26 percent
Glass Beads (pre-mix)	30 percent minimum
Yellow Pigment	2 percent minimum
Calcium Carbonate and Inert Fillers (shall not contain silica other than as glass beads)	42-46 percent

The yellow material's combined totals of lead, cadmium, mercury, and hexavalent chromium shall not exceed 100 parts per million.

The thermoplastic manufacturer shall certify, according to Subsection 106.04, that the material will meet the requirements specified.

912.13 Inorganic Zinc Coating System.
A complete coating system of an inorganic zinc-rich primer, a high-build epoxy intermediate coat, and a urethane finish coat shall be selected from one of the approved coating systems listed below. All products for the complete system, including thinners and solvents, shall be from the same manufacturer and shall be as follows, or from the current Bureau of Materials Qualified Paints List (QPL):

Code #	Manufacturer	Primer	Intermediate	Finish
IEU-3	Kop-Coat	No. 701	No. 200 HB Epoxy	No. 1122 BRS
IEU-7	Devoe	Catha-Coat (302 A)	Bar-Rust 235	Devthane 359
IEU-11	Valspar Corporation	MZ-7 Inorganic Zinc Rich, 13-F-12 Green	Val-Chem Hi-Build Epoxy 89 Series	Urethane Enamel V40 Series
IEU-13	Con-Lux	Zinc-Plate 21, Type 2	Epolon Multi-Mill	Acrolon II
IEU-14	Carboline	Carbo Zinc 11 HS	Carboline 893	Carbothane 134 HS
IEU-17	Ameron	Dimetcote 21-9	Amercoat 383 HS	Amercoat 450 HS
IEU-18	Elite Coatings Co.	P-159 Inorganic Zinc Primer	E-375 Polyrox High Build Epoxy	Shinethane Urethane LS-5436/LS-5437
IEU-19	International Protective Coatings	Interzinc 22 HS	Intergard 475 HS	Interthane 990 HS

Drying time between coats shall be per the manufacturer's recommendations.

The following information shall be submitted for the system selected at least one month before painting is anticipated:

1. A 4 liter sample for each coat of paint in the system.
2. Infrared curves (2.5 to 15 micrometers) for each coat. Curves for the dry film of the vehicle (binder) of each component and for the mixed paint shall be included.
3. Weight per liter, at 25 °C, for each coat. Variance shall be within plus or minus 50 grams of the normal weight per liter of the sample that was approved and placed on the QPL.
4. Viscosity in Krebs Units, at 25 °C, for each coat. Variance shall be within plus or minus 5 Krebs Units, or equivalent units of another viscometer, of the viscosity of the sample that was approved and placed on the QPL.
5. Percent of solids by weight of each coat.
6. Percent of metallic zinc by weight in the dry film of the cured zinc primer coat. This percentage shall be greater than or equal to that of the sample that was approved and placed on the QPL.
7. Percent of metallic zinc by weight in the zinc pigment component.
8. Finish coat color chips for selection of color by the Engineer.
9. The required curing time and dry film thickness for the qualification of the zinc primer for slip-critical connections in conformance with the requirements of AASHTO, Division I, Table 10.32.3C for Class of Surface B. A certified test report with the slip coefficient tested according to AASHTO Division 1, Article 10.32.3.2.3.
10. Technical data sheets, MSDS, and specific application instructions for all coats. In the event of a conflict between the data/instruction sheets and these Specifications, with the approval of the Engineer, the manufacturer's requirements shall govern. Work shall not be allowed to proceed until the information is received and approved.
11. Mixing and thinning directions.
12. Recommended spray nozzles and pressures.

The Contractor shall submit the manufacturer's recommended repair procedures to correct damage such as that caused in handling and shipping, deficient or excessive coating thickness, removal of zinc salts and other contaminants that would be detrimental to succeeding coats, and procedures for surface preparation and painting of rust spots.

The Contractor shall provide the services of a paint or a painting technical representative from the paint manufacturer at the beginning of operations and whenever required during operations.

Each container of paint shall be labeled to show the name of the manufacturer, the trade name designation of the contents, the lot or batch number, the date of manufacture, and the volumetric contents in liters or the weight of zinc powder in kilograms. Each container shall be labeled according to the Code of Federal Regulations for flammables and shall contain all information necessary to comply with NJSA 34:5A-1 New Jersey Worker and Community Right To Know Act.

912.14 Epoxy Mastic Coating System.

A complete coating system of an aluminum epoxy mastic primer and a urethane finish coat shall be selected from one of the approved coating systems listed below. All products for the complete system, including thinners and solvents, shall be from the same manufacturer and shall be as follows, or from the current Bureau of Materials Qualified Paints List (QPL):

Code #	Manufacturer	Primer	Finish
EU-4	Devoe	Bar-Rust 235	Devthane 359
EU-6	Kop-Coat	Aluminum Epoxy Mastic	No. 1122 BRS
EU-7	Con-Lux	Epolon 81 Aluminum	Acrolon II-2200 Series
EU-9	Carboline	Carbomastic 90 Aluminum	Carbothane 134 HS
EU-10	MAB	Ply-Mastic 101	Ply-Thane 890 HS
EU-11	Birk	Birk Aluminum Mastic Coating No. 50	Birk Aliphatic Polyurethane No. 30
EU-12	Ameron	Amerlock 400 AL	Amercoat 450 HS
EU-13	Sherwin Williams	Epoxy Mastic Aluminum	Hi-Solids Polyurethane B65 Series
EU-14	Mercury Paint	Mermas 100 Epoxy Mastic	Merthane 300 Urethane
EU-15	Valspar	75-A-1 Alumapoxy	Urethane Enamel V40 Series

Drying time between coats shall be per the manufacturer's recommendations.

The following information shall be submitted for the system selected at least one month before painting is anticipated:

1. A 4 liter sample for each coat of paint in the system.
2. Infrared curves (2.5 to 15 micrometers) for each coat. Curves for the dry film of the vehicle (binder) of each component and for the mixed paint shall be included.
3. Weight per liter, at 25 °C, for each coat. Variance shall be within plus or minus 50 grams of the nominal weight per liter of the sample that was approved and placed on the QPL.
4. Viscosity in Krebs Units, at 25 °C, for each coat. Variance shall be within plus or minus 5 Krebs Units, or equivalent units of another viscometer, of the viscosity of the sample that was approved and placed on the QPL.
5. Percent of solids by weight of each coat.
6. Finish coat color chips for selection of color by the Engineer.
7. Technical data sheets, MSDS, and specific application instructions for all coats. In the event of a conflict between the data/instruction sheets and these Specifications, with the approval of the Engineer, the manufacturer's requirements shall govern. Work shall not be allowed to proceed until the information is received and approved.
8. Mixing and thinning directions.
9. Recommended spray nozzles and pressures.

The Contractor shall submit the manufacturer's recommended repair procedures to correct damage such as that caused in handling and shipping, deficient or excessive coating thickness, removal of zinc salts and other contaminants that would be detrimental to succeeding coats, and procedures for surface preparation and painting of rust spots.

The Contractor shall provide the services of a paint or a painting technical representative from the paint manufacturer at the beginning of operations and whenever required during operations.

Each container of paint shall be labeled to show the name of the manufacturer, the trade name designation of the contents, the lot or batch number, the date of manufacture, and the volumetric contents in liters or the weight of zinc powder in kilograms. Each container shall be labeled according to the Code of Federal Regulations for flammables and shall contain all information necessary to comply with NJSA 34:5A-1 New Jersey Worker and Community Right To Know Act.

912.15 Organic Zinc Coating System.

A complete coating system of an organic zinc-rich primer, a high build epoxy intermediate coat, and a urethane finish coat shall be selected from one of the approved coating systems listed below. All products for the complete system, including thinners and solvents, shall be from the same manufacturer and shall be as follows, or from the current Bureau of Materials Qualified Paints List (QPL):

Code #	Manufacturer	Primer	Intermediate	Finish
OEU-3	Devoe	Catha-Coat 315	Bar-Rust 235	Devthane 359
OEU-7	Porter International	Interzinc 52	Interplus 770	Interthane PSY 999
OEU-15	Valspar	MZ-4 Epoxy Zinc Rich, 13-F-4 Green	Val-Chem Hi-Build Epoxy 89 Series	Urethane Enamel V40 Series
OEU-16	Con-Lux	Zinc-Plate 49, Type 2	Epolon Multi-Mill	Acrolon II
OEU-17	Con-Lux	Zinc-Plate 72e Epoxy Prime	Epolon Multi-Mill	Acrolon II
OEU-18	Carboline	Carboline 858	Carboline 893	Carbothane 134 HS
OEU-19	MAB	Ply-Tile Zinc Rich Primer 520-A-331	Ply-Tile 520-W-360 or Ply-Tile 520-W-45	Ply-Thane 890 HS
OEU-20	Birk	Birk Zinc Rich Epoxy Primer No. 60	Birk High Build Epoxy Coating No. 70	Birk Aliphatic Polyurethene No. 30
OEU-21	Ameron	Amercoat 68 HS	Amercoat 383 HS	Amercoat 450 HS
OEU-22	Sherwin Williams	Zinc Clad IV	Heavy Duty Epoxy B67 Series	Hi-Solids Polyurethane B65 Series
OEU-23	Elite Coatings Co.	P-281 Epoxy Zinc Rich	E-375 Polycrox High Build Epoxy Primer	Shinethane Urethane LS-5436/LS-5437

Drying time between coats shall be per the manufacturer's recommendations.

The following information shall be submitted for the system selected at least one month before painting is anticipated:

1. A 4 liter sample for each coat of paint in the system.
2. Infrared curves (2.5 to 15 micrometers) for the zinc primer, intermediate, and finish coats to include curves for the dry film of the vehicle (binder) of each component and for the mixed paint.
3. Weight per liter, at 25 °C, for the zinc primer, intermediate, and finish coats. Variance shall be within plus or minus 50 grams of the nominal weight per liter of the sample that was approved and placed on the QPL.
4. Viscosity in Krebs Units, at 25 °C, for the zinc primer vehicle and the intermediate and finish coat paints. Variance shall be within plus or minus 5 Krebs Units, or equivalent units of another viscometer, of the viscosity of the sample that was approved and placed on the QPL.
5. Percent of solids by weight of the zinc primer vehicle and the intermediate and finish coat paints.
6. Percent of metallic zinc by weight in the dry film of the cured zinc primer coat. This percentage shall be greater than or equal to that of the sample that was approved and placed on the QPL.
7. Percent of metallic zinc by weight in the zinc pigment component.
8. Finish coat color chips for selection of color by the Engineer.
9. The required curing time and dry film thickness for the qualification of the zinc primer for slip-critical connections in conformance with the requirements of AASHTO, Division I, Table 10.32.3C for Class of Surface A. A certified test report with the slip coefficient tested according to AASHTO Division 1 Article 10.32.3.2.2.
10. Technical data sheets, MSDS, and specific application instructions for all coats. In the event of a conflict between the data/instruction sheets and these Specifications, with the approval of the Engineer, the manufacturer's requirements shall govern. Work shall not be allowed to proceed until the information is received and approved.
11. Mixing and thinning directions.
12. Recommended spray nozzles and pressures.

The Contractor shall submit the manufacturer's recommended repair procedures to correct damage such as that caused in handling and shipping, deficient or excessive coating thickness, removal of zinc salts and other contaminants that would be detrimental to succeeding coats, and procedures for surface preparation and painting of rust spots.

The Contractor shall provide the services of a paint or a painting technical representative from the paint manufacturer at the beginning of operations and whenever required during operations.

Each container of paint shall be labeled to show the name of the manufacturer, the trade name designation of the contents, the lot or batch number, the date of manufacture, and the volumetric contents in liters or the weight of zinc powder in kilograms. Each container shall be labeled according to the Code of Federal Regulations for flammables and shall contain all information necessary to comply with NJSA 34:5A-1 New Jersey Worker and Community Right To Know Act.

SECTION 913 - PIPE

913.03 Ductile Iron Water Pipe.
THE FIRST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Ductile iron water pipe shall conform to ANSI/AWWA C151/A21.51.

SECTION 914 – PORTLAND CEMENT CONCRETE, MORTOR, AND GROUT

914.02 Portland Cement Concrete Design, Control, and Acceptance Testing Requirements.
THE LIST FOR THE SELECTED STRUCTURAL CONCRETE PAY ITEM ADJUSTMENT HAS BEEN CHANGED TO:

E. Acceptance Testing for Strength for Pay Adjustment Items. Concrete Pay Items which are subject to pay adjustment and the base prices are as follows:

DESCRIPTION	UNIT	BASE PRICE
CONCRETE IN SUPERSTRUCTURE, DECK SLABS	CM	$600.00
CONCRETE IN SUPERSTRUCTURE, PARAPETS	LM	$400.00

B. Proportioning and Verification.
THE SECOND SENTENCE OF THE THIRD PARAGRAPH IS CHANGED TO:

At least six 100 by 200 millimeter test cylinders shall be prepared from each batch and cured according to AASHTO T 23 or AASHTO T 126.

THE FIRST SENTENCE OF THE TENTH PARAGRAPH IS CHANGED TO:

Classes A and B concrete may be designed to achieve early strength requirements by increasing the Cement content.

C. Acceptance Testing Procedures for Slump and Air Entrainment.
THE FIRST SENTENCE OF THE FOURTH PARAGRAPH IS CHANGED TO:

Following any permitted additions, the drum shall be rotated at the recommended mixing speed for a minimum of 30 revolutions without exceeding 300 total revolutions, the original test results shall be disregarded, and a single test for both slump and air entrainment performed.

D. General Acceptance Testing Requirements for Strength.
THE FOLLOWING IS ADDED AFTER THE SECOND PARAGRAPH:

Concrete test specimens which are to be used for determination of early strengths for form removal, opening to traffic, or otherwise placing the concrete into service shall be cured according to the field curing provisions in AASHTO T-23.

E. Acceptance Testing for Strength for Pay-Adjustment Items.
THE ENTIRE TEXT OF THIS SUBPART AFTER THE FIRST PARAGRAPH IS CHANGED TO:

The amount of pay-adjustment in dollars is the product of the Pay Item base price times the lot quantity times the percent pay-adjustment (expressed as a decimal) given by Equation 1 or Equation 2.

Equation 1 and Equation 2:

Quality	Pay-adjustment (Percent)	
PD < 50	PPA = 3.0 - 0.3 PD	Equation 1
PD ≥ 50	PPA = 26.0 - 0.76 PD	Equation 2

Where: PPA = Percent Pay-adjustment
PD = Percent Defective (Estimate of percent of lot below the class design strength by the use of Equation 3 and Subsection 914.05, Table 914-5)

Equation 3:

$$Q = (ALS - CDS) / S$$

Where: Q = Quality index for pay-adjustment computations
ALS = Average lot strength in psi
CDS = Class design strength in psi
S = Standard deviation of the strength test results in psi for the lot as computed by Equation 4

Equation 4:

$$S = \sqrt{\frac{\Sigma(Xi - ALS)^2}{N-1}}$$

Where: Σ = Summation
Xi = Individual test result (average strength of a test cylinder pair)
N = Number of test results for the lot

Note: When only a single test result is available, the standard deviation "S" is assumed to equal 2 Mpa.

For lots having percent defective (PD) levels less than 10 percent, Equation 1 provides positive adjustments to the contract price. For lots having exactly 10 percent defective, there is no adjustment to the contract price. For lots having greater than 10 percent defective, Equations 1 or 2, as appropriate, subtract progressively larger amounts from the contract price.

If, based on the initial series of tests, the lot quality of a pay-adjustment item is estimated to be PD = 50 or greater, or if any individual test value (average of a cylinder pair) falls below the retest limit for non-pay-adjustment concrete in Subsection 914.05, Table 914-4, the Engineer has the option to reevaluate by coring or other suitable means. When this provision is applied to Class P concrete, each beam or pile in the steam bed will be evaluated separately.

If the Department elects not to core, the Contractor may accept the pay-adjustment of (PPA) calculated by Equation 2 or, when approved by the Engineer, may take cores according to Subsection 914.05, Table 914-4 at no cost to the Department. The Contractor must take the cores within 60 days from notification of the option to core. As an aid in making this decision, the Contractor will be permitted to perform nondestructive testing using a method or device approved by the Engineer.

When re-evaluation is accomplished by a method other than coring, the results will be used only to determine what further action is to be taken. If any of the non-core tests results are below the class design strength, the Engineer has the option to core. If this option is waived, the Contractor may elect to core, at

no cost to the State and within 60 days after being presented with this option, or to accept the pay-adjustment computed from the initial test cylinder results. If the Contractor elects to core, the coring shall be performed as directed and the Department will test the cores. If none of the non-core test results is below the class design strength, the Engineer may elect either to core or to accept the lot at 100 percent payment.

If, based on the core results, the lot is determined to be at a quality level of PD < 75, the pay-adjustment shall be computed by Equation 1 or Equation 2, as appropriate. If the lot is confirmed to be at a quality level of PD = 75 or greater, the lot is considered to be rejectable and the Engineer may:

1. Require the Contractor to remove and replace the defective lot at no cost to the State,
2. Allow the Contractor to leave the defective lot in place and receive a percent pay-adjustment (PPA) computed by Equation 2, or
3. Allow the Contractor to submit a plan, for approval, for corrective action to be performed at no cost to the State. If the plan for corrective action is not approved, either option 1 or 2 above may be applied.

F. Acceptance Testing for Strength for Non-Pay-Adjustment Items.
THE ENTIRE TEXT OF THIS SUBPART IS CHANGED TO:

All concrete items not specifically designated as pay-adjustment items as described in Subsection 914.02, Subpart E are considered to be non-pay-adjustment items, but may be accepted by pay-adjustment under certain circumstances. Such an item is eligible for 100 percent payment (PA = 0) provided the retest limit of Subsection 914.05, Table 914-4 is met. If this requirement is not met, the item will be treated as a pay-adjustment item according to Subsection 914.02, Subpart E, and all pay-adjustment provisions shall apply except that the item bid price will be used instead of an item base price in the computation of the pay-adjustment.

When a pay-adjustment is computed for any of the following items, which are only partially composed of concrete, the amount of pay-adjustment, if any, will be multiplied by the Estimated Percentage of Concrete (expressed as a decimal) as indicated below:

Pay Item	Estimated Percentage of Concrete
INLETS, TYPE ___	30
INLETS, TYPE ___, USING EXISTING CASTING	30
INLETS, TYPE B- ___	40
INLETS, TYPE B- ___, USING EXISTING CASTING	40
INLETS, TYPE ___ MODIFIED	40
INLETS, TYPE ___ MODIFIED, USING EXISTING CASTING	40
INLETS, TYPE ES	50
INLET CASTINGS, TYPE ES	40
MANHOLES	30
MANHOLES, ___ MM DIAMETER	30
MANHOLES, USING EXISTING CASTING	30
MANHOLES, SANITARY SEWER	30
MANHOLES, SANITARY SEWER, USING EXISTING CASTING	30
GRANITE CURB	25
RESET GRANITE CURB	25
BEAM GUIDE RAIL ANCHORAGES	25
CHAIN-LINK FENCE, ___ M HIGH	25
CHAIN-LINK FENCE, ALUMINUM-COATED STEEL, ___ M HIGH	25
CHAIN-LINK FENCE, PVC-COATED STEEL, ___ M HIGH	25
CHAIN-LINK FARM-TYPE FENCE	25
GATES, CHAIN-LINK FENCE, ___ M WIDE	25
GATES, CHAIN-LINK FENCE, ALUMINUM-COATED STEEL, ___ M WIDE	25
GATES, CHAIN-LINK FENCE, PVC-COATED STEEL, ___ M WIDE	25
GATES, CHAIN-LINK FARM-TYPE FENCE, ___ M WIDE	25
RESET FENCE	25
TEMPORARY CHAIN-LINK FENCE, ___ M HIGH	25

GUIDE SIGNS, TYPE GA, BREAKAWAY SUPPORTS	20
GUIDE SIGNS, TYPE GA, NON-BREAKAWAY SUPPORTS	20

The amount of pay-adjustment for pay items not listed above is the product of the unit bid price times the lot quantity times the percent pay-adjustment given by Equation 1.

914.04 Sampling and Testing Methods.

THE FOLLOWING AASHTO TEST METHOD IS ADDED:

T303	Standard Test Method for Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction.

914.05 Tables.

TABLES 914-1, 914-3, AND 914-4 ARE CHANGED TO:

Table 914-1 Requirements for Roadway Concrete Items

	Concrete Class	Slump (mm)	Percent Air Entrainment for Coarse Aggregate Size Numbers				
			357	467	57	67	8
Cast-in-Place Items							
Surface Course, Bridge Approach Slabs, Bridge Approach Transition Slabs	B	50±25	5.0±1.5	5.0±1.5	6.0±1.5	6.0±1.5	7.0±1.5
Base Course	B	50±25	5.0±1.5	5.0±1.5	6.0±1.5	6.0±1.5	7.0±1.5
Inlet and Manhole Walls, Headwalls, Miscellaneous Concrete	B	75±25	----	----	6.0±1.5	6.0±1.5	7.0±1.5
Inlet and Manhole Top Slabs, Sidewalks, Driveways, Islands	B	75±25	----	----	6.0±1.5	6.0±1.5	7.0±1.5
Slope Gutters, Vertical Curb, Sloping Curb, Barrier Curb and Base	B	100±25	----	----	6.0±1.5	6.0±1.5	7.0±1.5
Concrete and White Concrete Vertical, Sloping and Barrier Curb, Concrete and White Concrete Islands	B	100±25	----	----	7.0±2.0	7.0±2.0	8.0±2.0
Foundations for:							
Inlets and Manholes	B	75±25	6.5 max	6.5 max	7.5 max	7.5 max	8.5 max
Electrical Items	B	75±25	----	----	7.5 max	7.5 max	8.5 max
Signs	B	75±25	----	----	6.0±1.5	6.0±1.5	7.0±1.5
Junction Boxes	B	75±25	----	----	7.5 max	7.5 max	8.5 max

Table 914-1 (Continued)

	Concrete Class	Slump (mm)	Percent Air Entrainment for Coarse Aggregate Size Numbers				
			357	467	57	67	8
Cast-in-Place Items (continued)							
Footings for Fence Posts, Guide Rail End Treatment	B	75±25	----	----	7.5 max	7.5 max	8.5 max
Culverts	A	75±25	----	----	6.0±1.5	6.0±1.5	7.0±1.5
Monuments	A	75±25	----	----	7.5 max	7.5 max	8.5 max
Slope Protection	B	50±25	----	----	6.0±1.5	6.0±1.5	7.0±1.5
Precast Items							
Culverts	A	75±25	----	----	6.0±1.5	6.0±1.5	7.0±1.5
Inlets and Manholes, Junction Boxes, Headwalls, Reinforced Concrete End Sections (See note 2)	B	75±25	----	----	6.0±1.5	6.0±1.5	7.0±1.5
Concrete and White Concrete Barrier Curb	B	75±25	----	----	7.0±2.0	7.0±2.0	8.0±2.0

Note 1: According to Subsection 501.03, a Type F water-reducing, high range admixture will be permitted according to Subsection 905.02 and Subsection 914.02, Subparts B and C. When a Type F admixture is used, the table Slump and Air Content values for the given concrete item shall be changed as follows:

Slump: 150 ± 50 millimeters

Air Content: Increase both the target value and tolerance percentages by 0.5.

Note 2: For the items in this category, the slump may be reduced to zero (dry cast) provided that adequate consolidation, acceptable to the Engineer, is achieved.

Table 914-3 Mix Design Requirements

	Class of Concrete					
	A	**B**	**S**	**P**	**P-1**	**P-2**
Class Design Strength (28 days, Mpa Note 3)	32	26	14	38	42	45
Verification Strength (28 days, Mpa Note 3)	37	31	--	42	45	48
Maximum Water/Cement Ratio (Note 2)						
kg/kg	0.443	0.488	0.577	Note 1	Note 1	Note 1
L/bag	19	21	25	Note 1	Note 1	Note 1
Minimum Cement Content						
kg/m^3	363	335	391	Note 1	Note 1	Note 1
$bags/m^3$	8.5	7.8	9.2	Note 1	Note 1	Note 1

Note 1: According to PCI Manual, except as indicated in Note 2.

Note 2: The maximum water/cement ratio for all classes of concrete except for Classes P, P-1 and P-2, when a Type F water-reducing, high range admixture is used according to Tables 914-1 and 914-2, shall be reduced by 0.40 kg/kg (17.0 L/bag).

Note 3: All concrete test results shall be recorded to the nearest 0.10 Mpa.

Note 4: To successfully meet the requirements of this specification, the target production strength must be higher than the Class Design Strength by an amount proportional to the Producer's within-lot standard deviation.

Table 914-4 Lot Sizes, Sampling Rates and Retest Limits

	Class of Concrete					
	A	**B**	**S**	**P**	**P-1**	**P-2**
Lot Size (maximum)	One Day's Production			One Day's Production of a Single Steam Bed		
Pay-Adjustment Items						
Initial Sampling Rate	5/Lot	5/Lot	--	5/Lot	5/Lot	5/Lot
Retest Sampling Rate (minimum)	5/Lot	5/Lot	--	5/Unit or Load Test		
Non-Pay-Adjustment Items						
Initial Sampling Rate	3/Lot	2/Lot	1/Lot	3/Lot	3/Lot	3/Lot
Retest Limit (Mpa)	30	25	14	37	41	44
Retest Sampling Rate	5/Lot	5/Lot	5/Lot	5/Lot	5/Lot	5/Lot

Note 1: The lot sizes are maximums and, at the option of the Engineer, any lot may be subdivided into two or more smaller lots. When such a subdivision is made, the specified sampling rate applies to each of the smaller lots.

Note 2: An initial strength test result is defined as the average strength of two 100 by 200 millimeter compression test cylinders, cured for 28 days, and tested in the Department Laboratory except for Classes P, P-1, and P-2 cylinders which may be tested at the fabricator's plant under the supervision of the Engineer.

Note 3: A retest result is defined as the strength of an individual test result obtained by coring or other suitable means. If retest is performed by coring, each retest result is defined as the corresponding nominal core strength divided by 0.85.

Note 4: The specified sampling rates shall apply except that no more than one test per truckload or batch of concrete will be required (except for air and slump tests when retempering). It is expected that each structural component will have a representative sample taken. At the option of the Engineer, nonstructural concrete lots consisting of 15 cubic meters or less may be accepted without strength tests.

Note 5: No lot shall include more than one class of concrete nor include concrete of the same class having different specified levels of slump or air entrainment.

Note 6: For prestressed concrete, if more than one bed is used or if more than 60 cubic meters of concrete are used, the production shall be subdivided as equally as possible into two or more lots.

Note 7: Retest limit for non-pay-adjustment roadway and structural items requiring the use of Class B, white concrete, shall be 21 Mpa.

SECTION 916 - SIGN MATERIALS

916.10 Breakaway Steel "U" Post Sign Supports.

THE FIRST PARAGRAPH IS CHANGED TO:

Steel "U" post shall be either Ribbak Modified-Flanged channel section as manufactured by Marion Steel Co., Marion, OH or the "U" channel section as manufactured by Highway Steel, Inc., Chicago Heights, IL. The breakaway system shall be the Lap Splice System as manufactured by Marion Steel, Inc. for the Ribbak Modified-Flanged channel section and Safety Splice System as manufactured by Highway Steel, Inc. for the "U" Channel Section, except that the steel "U" posts shall be galvanized after fabrication, including punching and drilling holes, in conformance with ASTM A 123.

SECTION 919 - MISCELLANEOUS

THE FOLLOWING NEW SUBSECTION IS ADDED:

919.22 Controlled Low Strength Material (CLSM).

CLSM shall conform to the following:

Fine Aggregate	901.12
Chemical Admixtures	905.02
Portland Cement, Type I, II, III	919.11
Water	919.15

CLSM shall consist of a mixture of portland cement, water, fine aggregate and chemical admixtures. Fly ash shall not be permitted in mixes intended for trench backfilling. The CLSM mixture shall be proportioned to provide

a backfill material that is self-compacting and capable of being excavated with hand tools at a later date. CLSM shall be proportioned to produce a 28-day compressive strength of 345 to 1 035 kilopascals. An accelerating admixture shall be used to produce a fast setting flowable mixture as required. The CLSM shall have a permeability of $1.7 \times 10^{-3} \pm 0.2 \times 10^{-3}$ centimeters per second according to ASTM D5084 for backfilling of conduits and piping.

At least 45 days prior to the start of any CLSM placement, trial batches of CLSM shall be prepared of the same materials and proportions proposed for use on the project. Each mix design shall be submitted on portland cement concrete mix design forms furnished by the Department, naming the sources of materials and test data.

Department personnel will be present at the time of verification batching to confirm that the proportions and materials batched are according to the proposed mix designs. At least six 150 X 300 millimeters compression test cylinders shall be prepared for each batch according to ASTM 5971-96 for 28-day strengths except for fast setting mixes, which shall be tested at the specified cure time.

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

Section I, paragraph 2;
Section IV, paragraphs 1, 2, 3, 4, and 7;
Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.

6. **Selection of Labor:** During the performance of this contract, the contractor shall not:

a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attach-ment A), or

b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."

2. **EEO Officer:** The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. **Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. **Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investi-gation, the contractor will inform every complainant of all of his avenues of appeal.

6. **Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contrac-tor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions,

such contractor shall immediately notify the SHA.

8. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procure-ment of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized repre-sentatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of $10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. **General:**

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcon-tractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except

as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. **Classification:**

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. **Payment of Fringe Benefits:**

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. **Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:**

a. Apprentices:

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an accept-able program is approved.

b. Trainees:

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. **Apprentices and Trainees (Programs of the U.S. DOT):**

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

1. **Compliance with Copeland Regulations (29 CFR 3):**

6. **Withholding:**

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. **Overtime Requirements:**

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. **Violation:**

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated dam-ages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. **Withholding for Unpaid Wages and Liquidated Damages:**

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. **Payrolls and Payroll Records:**

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superin-tendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less that the applicable wage rate and fringe benefits or cash equivalent for the classification of worked performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than $1,000,000 (23 CFR 635) the contractor shall:

a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not

ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more that $10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environ-mental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facili-ties.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such require-ments.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. **Instructions for Certification - Primary Covered Transactions:**

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzle-ment, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

2. **Instructions for Certification - Lower Tier Covered Transactions:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions of $25,000 or more - 49 CFR 29)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influenc-ing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT PREFERENCE FOR APPALACHIAN CONTRACTS

(Applicable to Appalachian contracts only.)

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph 1c shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph 4 below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which he estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, he shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within 1 week following the placing of a job order by the contractor with the State Employment Service, the State Employ-ment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph 1c above.

5. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these Specifications:

   a. Covered area means the geographical area in which the Project is located.

   b. Director means Director, Office of Federal Contract Compliance Programs, United States Department of Labor or any person to whom the Director delegates authority.

   c. Employer identification number means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, US Treasury Department Form 941.

   d. Minority includes:

      (1) Black (a person having origins in any of the black African racial groups not of Hispanic origin);

      (2) Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race);

      (3) Asian and Pacific Islander (a person having originals in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

      (4) American Indian or Alaskan Native (a person having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participating or community identification).

2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. The Contractor shall implement the specific affirmative action standards provided in paragraphs 6a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction Contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. The

Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

4. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the Contractor has a collective bargaining agreement to refer either minorities or women shall excuse the Contractor's obligations under these Specifications, Executive Order 111246, or the regulations promulgated pursuant thereto.

5. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the US Department of Labor.

6. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

   a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The contractor shall specifically ensure that all foreman, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment with specific attention to minority or female individual working at such sites or in such facilities.

   b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

   c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred back to the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

   d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the contractor a minority person or women sent by the Contractor, or when the Contractor

has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the source compiles under 6b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news median, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and females and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction Contraction and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

7. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (6a through p). The efforts of a Contractor association, joint contractor union, Contractor-Community, or other similar group of which the Contractor is a member and participant may be asserted as fulfilling any one or more of its obligations under 6A through p of these Specifications provided that the Contractor actively participates in the group, make every effort to assure that the group has a positive impact on the employment of minorities and females in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female work force participation, make a good faith effort to meet its individual goals and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

8. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women both minority and nonminority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the

Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

9. The Contractor shall not use the goals or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

10. The Contractor shall not enter any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

11. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspensions, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246 as amended.

12. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 6 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

13. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (such as mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

14. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (such as those under the Public Works Employment Act of 1977 and the community Development Block Grant Program).

15. Noncompliance by the Contractor with the requirements of the Affirmative Action Program for Equal Employment Opportunity may be cause for delaying or withholding monthly and final payments pending corrective and appropriate measures by the Contractor to the satisfaction of the Department.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The goals for minority and female participation, in the covered area, expressed in percentage terms for the Contractor's aggregate work force in each trade, on all construction work are as shown on Page 2.

   These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

   The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4. (3) a, and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

2. The Contractor will provide the Department with written notification in triplicate within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification will list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

3. As used in this Notice and in the Contract resulting from this solicitation the covered area is the county or counties in which the Project is located.

4. If a project is located in more than one county, the minority work hours goal, only, will be determined by the county which serves as the primary source of hiring or, if workers are obtained almost equally from one or more counties, the single minority goal will be the average of the affected county goals.

WORK HOUR GOALS IN EACH TRADE FOR MINORITY AND FEMALE PARTICIPATION

COUNTY	MINORITY PARTICIPATION PERCENT	FEMALE PARTICIPATION PERCENT
Atlantic	18.2	6.9
Bergen	15.0	6.9
Burlington	17.3	6.9
Camden	17.3	6.9
Cape May	14.5	6.9
Cumberland	16.0	6.9
Essex	17.3	6.9
Gloucester	17.3	6.9
Hudson	12.8	6.9
Hunterdon	17.0	6.9
Mercer	16.4	6.9
Middlesex	15.0	6.9
Monmouth	9.5	6.9
Morris	17.3	6.9
Ocean	17.0	6.9
Passaic	12.9	6.9
Salem	12.3	6.9
Somerset	17.3	6.9
Sussex	17.0	6.9
Union	17.3	6.9
Warren	1.6	6.9

STATE OF NEW JERSEY EQUAL EMPLOYMENT OPPORTUNITY FOR CONTRACTS FUNDED BY FHWA

The parties to this Agreement do hereby agree that the provisions of NJSA 10:2-1 through 10:2-4 and NJSA 10:5-31 et seq (PL 1975, c 127, as amended and supplemented) dealing with discrimination in employment on public contracts, and the rules and regulations promulgated pursuant thereunto, are hereby made a part of this contract and are binding upon them.

During the performance of this contract, the Contractor agrees as follows:

a. The Contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status or sex. The Contractor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status or sex. Such action shall include but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Department Compliance Officer setting forth provisions of this nondiscrimination clause;

b. The Contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status or sex;

c. The Contractor of subcontractor, where applicable, will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Department of Compliance Officer, advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The notices referred to in paragraphs a and c may be obtained from the Supervising Engineer of Construction or his representative at the preconstruction conference.

EMERGING SMALL BUSINESS ENTERPRISE UTILIZATION ATTACHMENT

FHWA FUNDED CONTRACTS

I. UTILIZATION OF EMERGING SMALL BUSINESS ENTERPRISE (ESBE) AS CONTRACTORS, MATERIALS SUPPLIERS AND EQUIPMENT LESSORS.

The New Jersey Department of Transportation (NJDOT) advises each contractor or subcontractor that failure to carry out the requirements set forth in this attachment shall constitute a breach of contract and, after the notification of the applicable federal agency, may result in termination of the agreement or contract by the Department or such remedy as the Department deems appropriate. Requirements set forth in this section shall also be physically included in all subcontracts in accordance with USDOT requirements.

II. POLICY.

It is the policy of the NJDOT that Emerging Small Business Enterprises (ESBE), as defined in Section IV, Part B below, shall have an opportunity to participate in the performance of contracts financed in whole or in part with federal funds. In furtherance of this policy the NJDOT has established an Emerging Small Business Enterprise Program. This program is designed to promote participation and shared economic opportunity by smaller firms who qualify as ESBE's in NJDOT construction contracts and is undertaken pursuant to the authority contained in 23 CFR Part 26.

III. CONTRACTOR'S ESBE OBLIGATION.

The contractor agrees to ensure that ESBE's, as defined in Section IV, Part B below, have an equal opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with federal funds. In performing work under this agreement with the NJDOT, the contractor shall take all necessary and reasonable steps in accordance with the provisions of this attachment to ensure that ESBE's have the maximum opportunity to compete for and perform contracts. The contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of any contract obligation including, but not limited to, its performance of its obligations under this ESBE attachment.

IV. GOALS FOR THIS PROJECT.

A. This project includes a goal of awarding 15 percent of the total contract value to subcontractors, equipment lessors and/or material suppliers, which qualify as ESBE's.

1. Failure to meet the minimum goal placed on this project, or to provide a good faith effort to meet the minimum goal, may be grounds for rejection of the bid as being non-responsive.

2. As a source of information only, an ESBE Directory is available from the Division of Civil Rights/Affirmative Action. Use of this listing does not relieve the contractor of its responsibility to seek out ESBE's not listed, prior to bid. If a contractor proposes to use an ESBE contractor not listed in the ESBE Directory, the proposed ESBE firm must submit a completed certification application to the Division of Civil Rights/Affirmative Action, fifteen (15) days prior to bid date.

B. DEFINITIONS.

1. Emerging Small Business Enterprise is defined as: a for-profit business concern classified as a small business pursuant to the appropriate Small Business Administration regulations, and which is owned and controlled by individuals who do not exceed the personal net worth criteria ($750,000) established in 49 CFR Part 26.

2. Owned and Controlled is defined as: that at least 51% of the ownership interests as well as the management and daily business operations of the firm reside in individuals whose personal net worth does not exceed the requirements established in 49 CFR, Part 26.

V. COUNTING ESBE PARTICIPATION.

A. Each ESBE is subject to a certification procedure to ensure its ESBE eligibility status prior to the award of contract. In order to facilitate this process it is advisable for the bidder to furnish names of proposed ESBE's to the Department 15 days before bid opening. Once a firm is determined to be a bona fide ESBE by the Division of Civil Rights/Affirmative Action, the total dollar value of the contract awarded to the ESBE is counted toward the applicable goal.

B. The contractor may count toward its ESBE goal only expenditures to ESBE's that perform a commercially useful function in the work of a contract. An ESBE is considered to perform a commercially useful function when it is responsible for execution of a distinct element of the work of a contract and carrying out its responsibility by actually performing, managing and supervising the work involved. To determine whether an ESBE is performing a commercially useful function, the contractor shall evaluate the amount of work contracted, industry practice and other relevant factors.

C. If a ESBE does not perform or exercise responsibility for at least 30 percent of the total cost of its contract with its own work force, or the ESBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, you must presume that it is not performing a commercially useful function.

D. If the prime contractor is a certified ESBE, payments made to the contractor for work performed by the contractor will be applied toward the ESBE goal. Payments made to the prime contractor for work performed by non-ESBE's will not be applied toward the ESBE goal.

E. The prime contractor may count 60 percent of its expenditures to ESBE suppliers that are not manufacturers, provided that the ESBE supplier performs a commercially useful function in the supply process. The contractor may count 100% of its expenditure to ESBE suppliers who are also manufacturers. Manufacturers receive 100% credit toward the ESBE goal.

VI. GOOD FAITH EFFORT.

To demonstrate sufficient reasonable efforts to meet the ESBE contract goals, a bidder shall document the steps it has taken to obtain ESBE participation, including but not limited to the following:

A. Attendance at a pre-bid meeting, if any, scheduled by the Department to inform ESBE's of prime contracting and subcontracting opportunities under a given solicitation.

B. Advertisement in general circulation media, trade association publications, and small business publications for at least 20 days before bids are due. If 20 days are not available, publication for a shorter reasonable time is acceptable.

C. Written notification to ESBE's that their interest in the contract is solicited;

D. Efforts made to select portions of the work proposed to be performed by ESBE's in order to increase the likelihood of achieving the stated goal;

E. Efforts made to negotiate with ESBE's for specific bids including at a minimum:

1. The names, addresses and telephone numbers of ESBE's that were contacted;

2. A description of the information provided to ESBE's regarding the plans and specifications for the work to be performed; and

3. A statement of why additional agreements with ESBE's were not reached;

F. Information regarding each ESBE the bidder contacted and rejected as unqualified and the reasons for the bidder's conclusion;

G. Efforts made to assist the ESBE in obtaining bonding or insurance required by the bidder or the department.

NOTE: If the Division of Civil Rights/Affirmative Action determines that the apparent successful low bidder has failed to meet the requirements of this section, the bidder will be afforded the opportunity for an administrative reconsideration of that determination prior to the award or rejection of the contract. As part of the administrative reconsideration process, the bidder will have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate good faith efforts to do so. NJDOT will send the bidder a written decision on reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. The result of the reconsideration process is not administratively appealable to the USDOT.

VII. SUBMISSION OF REQUIRED DOCUMENTS.

A. The following shall be submitted either with the bid or to the Division of Civil Rights and Affirmative Action no later than seven (7) State business days after the date of receipt of bids.

1. ESBE Form "A2" - Schedule of ESBE Participation. List all ESBE's participating in the contract; listing the scope of work, dollar value and percent of total contract to be performed.

2. Supplement to ESBE Form "A2"- A list of all subcontractors who submitted bids or quotes on this project.

3. ESBE Form B - Affidavit of Emerging Small Business Enterprise. Each proposed ESBE not listed in the NJDOT ESBE directory must submit Form B attesting to its validity as an ESBE. (All firms must be certified by the Department's ESBE Coordinator prior to award of the contract).

4. Request for Exemption - In the event that the bidder fails to meet the specified goal, they must submit within Seven State business days of the bid, a written request for exemption to the goal. This request must include a written statement addressing Items A through G in Article VI of this attachment in addition to an accounting of the reason(s) why each items in the bid proposal was not subcontracted. Submittal of such request does not imply departmental approval. An assessment of the material will be conducted by the Department's Division of Civil Rights/Affirmative Action.

5. The name of the person who is serving as its ESBE Liaison Officer

B. The State Highway Engineer will be the sole judge of proper compliance and action taken in fulfilling the requirements as set forth herein.

VIII. ESBE LIAISON OFFICER.

A. The contractor shall designate an ESBE Liaison Officer who shall be responsible for the administration if its ESBE program in accordance with the requirements of this attachment.

IX. OBLIGATIONS AFTER AWARD OF THE CONTRACT.

If at any time following the award of contract, the contractor intends to sublet any portion(s) of the work under said contract, or intends to purchase material or lease equipment not contemplated during preparation of bids, said contractor shall take the following actions:

1. Notify the Resident Engineer, in writing, of the type and approximate value of the work the contractor intends to accomplish by such subcontract, purchase order or lease.

2. Attempt to obtain a qualified ESBE to perform the work.

3. Submit the Post-Award ESBE Certification Form to the Regional Supervising Engineer with his application to sublet or prior to purchasing material or leasing equipment. Post Award ESBE forms may be obtained from the Resident Engineer.

X. CONSENT BY DEPARTMENT TO SUBLETTING.

The Department will not approve any subcontract proposed by the Contractor unless and until said contractor has complied with the terms of this attachment.

XI. SELECTION AND RETENTION OF SUBCONTRACTORS.

A. The contractor is further obligated to provide the Resident Engineer with a listing of firms, organizations or enterprises solicited and those utilized as subcontractors on the proposed project. Such listing shall clearly delineate which firms are classified as an ESBE.

B. The contractor shall identify all efforts it made to identify and retain an ESBE as a substitution subcontractor when the arrangements with the original ESBE proved unsuccessful shall be submitted in writing to the Department's ESBE Coordinator for approval. Work in the category concerned shall not begin until such approval is granted in writing.

C. Notification of a subcontractor's termination will be sent to the Department by the contractor through the Resident Engineer. Said termination notice will state whether the subcontractor is an ESBE and the reason for termination.

XII. CONCILIATION.

Allegations of breach of any obligation contained in these ESBE provisions will be investigated by the Federal Office of Contract Compliance in conjunction with the Division of Civil Rights/Affirmative Action of the New Jersey Department of Transportation and the Federal Highway Administration.

XIII. DOCUMENTATION.

A. The Department or the federal funding agencies may at any time require such information as is deemed necessary in the judgement of the Department to ascertain the compliance of any bidder or contractor with the terms of these provisions.

B. Record and Reports.

The Contractor shall keep such records as are necessary to determine compliance with its Emerging Small Business Enterprise Utilization obligations. The records kept by the contractor will be designed to indicate:

1. The names of ESBE contractors, equipment lessors and material suppliers contacted for work on this project.

2. Work, services and materials which are not performed or supplied by the prime contractor.

3. The actual dollar value of work subcontracted and awarded to ESBE's.

4. Efforts taken in seeking out and utilizing ESBE's. This would include solicitations, quotes and bids regarding project work items, supplies, leases, or other contract items.

5. Documentation of all correspondence, contacts, telephone calls, or other actions taken to obtain the services of ESBE's on this project.

6. Records of all ESBE's who have submitted quotes/bids to the contractor on the project.

C. Submit reports, as required by the Department, on those contracts and other business transactions executed with ESBE's in such form and manner as may be prescribed by the Department.

D. All such records must be maintained for a period of three (3) years following acceptance of final payment and will be available for inspection by the Department.

XIV. PAYMENT TO SUBCONTRACTORS.

The Contractor agrees to pay its subcontractors in accordance with Subsections 109.05 and 109.07 of the 1996 Standard Specifications, as amended.

XV. NON-COMPLIANCE.

Failure by the bidder to comply with these provisions may result in rejection of the bid. The contractor may further be declared ineligible for future Department contracts.

EQUAL EMPLOYMENT OPPORTUNITY SPECIAL PROVISIONS

1. General

   a. Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal employment opportunity as required by Executive Order 11246 and Executive Order 11375 are set forth in Required Contract Provisions (Form FHWA-1273) and these Special Provisions which are imposed pursuant to Section 140 of Title 23 USC, as established by Section 22 of the Federal Aid Highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the Equal Employment Opportunity requirements set forth in the Required Contract Provisions.

   b. The Contractor will work with the State agencies and the Federal Government in carrying out Equal Employment Opportunity obligations and in their review of activities under the contract.

   c. The Contractor and all subcontractors holding subcontracts, not including material suppliers, of $10,000 or more, will comply with the following minimum specific requirement activities of Equal Employment Opportunity. The Contractor will include these requirements in every subcontract of $10,000 or more with such modification of language as is necessary to make them binding on the subcontractor. (The equal employment opportunity requirements of Executive Order 11246, as set forth in Volume 6, Chapter 4, Section 1, Subsection 1 of the Federal-Aid Highway Program Manual, are applicable to material suppliers as well as contractors and subcontractors).

   d. Noncompliance by the Contractor with the requirements of the Affirmative Action Program for Equal Employment Opportunity may be cause for delaying or withholding monthly and final payments pending corrective and appropriate measures by the Contractor to the satisfaction of the Department.

2. Equal Employment Opportunity Policy

   The Contractor will accept as its operating policy the following statement which is designed to further the provisions of equal employment opportunity to all persons without regard to their race, color, religion, sex, or national origin, and to promote the full realization of equal employment opportunity through a positive continuing program:

It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, or national origin. Such action shall include employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and on-the-job training.

3. Equal Employment Opportunity Officer

The Contractor will designate and make known to the Department contracting officers an equal opportunity officer (hereinafter referred to as the EEO Officer) who will have the capability, authority and responsibility to effectively implement and promote an active contractor program of equal employment opportunity.

4. Dissemination of Policy

a. All members of the Contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommended such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the Contractor's equal employment opportunity policy and contractual responsibilities to provide equal employment opportunity in each grade and classification of employment. To ensure compliance, the following minimum actions will be taken:

(1) An initial project site meeting with key supervisory and office personnel will be conducted before or at the start of work, and then not less than once every 6 months, at which time the Contractor's equal employment opportunity program will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

(2) All new supervisory and office personnel will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official covering all major aspects of the Contractor's equal employment opportunity obligations within 30 days following their reporting for duty with the Contractor.

(3) All personnel engaged in direct recruitment for the project will be instructed by the EEO Officer or appropriate company official concerning the Contractor's procedures for locating and hiring minority and female employees.

b. In order to make the Contractor's equal employment opportunity policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the Contractor will take the following actions:

(1) Notices and posters setting forth the Contractor's equal employment opportunity policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

(2) The Contractor's equal employment opportunity policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, and/or other appropriate means.

5. Recruitment

a. When advertising for employees, the Contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer". All such advertisements will be published in newspapers or other publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

b. The Contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority and female applicants, including, but not limited to, State employment agencies, schools, colleges and minority-oriented organizations. To meet this requirement, the Contractor will, through his EEO Officer, identify sources of potential minority and female employees, and establish procedures with such sources whereby applicants may be referred to the Contractor for employment consideration.

In the event the Contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the Contractor's compliance with the equal employment opportunity contract provisions. (The US Department of Labor has held that where implementation of such agreements have the effect of discriminating against minorities or females, or obligates the Contractor to do the same, such implementation violates Executive Order 11246, as amended).

c. The Contractor will encourage his present employees to refer minority and female applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures pertaining to the referral of applicants will be discussed with employees.

6. Personnel Actions

Wages, working conditions and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, or national origin. The following procedures shall be followed:

a. The Contractor will conduct a project site inspection at the start of work, and periodically thereafter, to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The Contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The Contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the Contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The Contractor will promptly investigate all complaints of alleged discrimination made to the Contractor in connection with its obligations under this contract, and will resolve or attempt to resolve such complaints, within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, corrective action shall include such other persons. Upon completion of each investigation, the Contractor will inform complainants of available avenues of appeal.

7. Training Special Provisions

As part of the Contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The Contractor shall provide on-the-job training aimed at developing full journeypeople in the type of craft or job classification involved.

The number of training positions will be 4, where feasible consisting of at least 3 apprentices and 1 apprentice graduates of the Pre-Apprenticeship Training Cooperative Program, sponsored by the signatories of the October 26, 1994 Memorandum of Understanding, and/or trainees.

Apprentices are defined as registered members of an approved apprenticeship program recognized by the United States Department of Labor (USDOL) Bureau of Apprenticeship and Training (BAT) or a New Jersey State apprenticeship agency recognized by USDOL BAT (e.g., New Jersey Department of Education). Graduates of the Pre-Apprenticeship Training Cooperative Program shall be classified as apprentices. Trainees are defined as skilled, semi-skilled or lower level management individuals receiving training per one of the approved NJDOT "Revised Standard Training Guidelines" (available from the Division of Civil Rights).

Where feasible, at least 50% of the training positions will be assigned to Skilled Crafts which include but are not limited to Carpenters, Dockbuilders, Electricians, Ironworkers and Operating Engineers.

a. Contractor Submission and NJDOT Approval of the Initial Training Program.

At or after the preconstruction conference and prior to the start of work, the Contractor shall submit a training program to the Resident Engineer for his or her review and comments prior to Division of Civil Rights review and approval. The Contractor's training program shall include:

(1) the number of trainees or apprentices to be trained in all selected Training Positions,
(2) the Standard Program Hours for all positions,
(3) an estimate of the Minimum Available Hours actually feasible on the project toward completion of the Standard Program Hours per position,
(4) a training schedule of Estimated Start Dates for the apprentices or trainees, developed and coordinated with the project's work progress schedule,
(5) Training Guidelines for all positions, and
(6) which training will be provided by the Contractor and which by Subcontractors.

The number of apprentices and trainees shall be distributed among the work classifications on the basis of the Contractor's needs and the availability of journeypeople in the various crafts within a reasonable area of recruitment. The Contractor shall submit timely, revised training programs as required throughout the project to ensure that feasible and Maximum Available Training is provided. Maximum Available Training is defined as bringing each apprentice or trainee onto the project when work first becomes available in his/her craft and providing all available training until hours are no longer available.

b. Assignment of Training to Subcontractors

In the event that portions of the contract work are subcontracted, the Contractor shall determine how many, if any, of the apprentices or trainees are to be trained by subcontractors, provided, however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by these Training Special Provisions. The Contractor shall also ensure that these Training Special Provisions are made applicable to such subcontracts.

c. Requirements for Recruitment, Selection and Approval of Apprentices and Trainees

(1) Apprentices or trainees should be in their first year of apprenticeship or training. The Contractor shall interview and screen trainee candidates to determine if their actual work experience is equivalent to or exceeds that offered by the training program prior to submitting candidates, via the Resident Engineer, to the Division for review and approval or disapproval.

(2) Training and upgrading of minorities (e.g., Blacks, Asians or Pacific Islanders, Native Americans or Alaskan Natives, Hispanics) and females toward journeyperson status is a primary objective of these Training Special Provisions. Accordingly, the Contractor shall make every effort to enroll minorities and females, by conducting systematic and direct recruitment through public and private sources likely to yield minority and female apprentices or trainees, to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

(3) No employee shall be employed as an apprentice or trainee in any position in which he or she has successfully completed a training course leading to journeyperson status or in which he or she has been employed as a journeyperson. The Contractor shall satisfy this requirement by including appropriate questions in the employment application or by other suitable means and by submitting an accurate and complete "Apprentice/Trainee Approval Memorandum." Regardless of the methods used, the Contractor's records should document the findings in each case.

(4) Skilled craft trainees may complete up to 3,000 total training hours on NJDOT projects, with an extension of an additional 1,000 hours permitted on a case-by-case basis. Semi-skilled and lower-level management trainees attain journeyperson status upon completion of a training guideline and may complete up to three (3) different positions.

d. Apprenticeship and Training Programs

(1) The minimum length and type of training for each position will be established in the training program selected by the Contractor and approved by NJDOT and the Federal Highway Administration. NJDOT will approve a program if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average apprentice or trainee for journeyperson status in the craft concerned by the end of the training period.

(2) Apprenticeship programs registered with the US Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by USDOL BAT and training programs approved but not necessarily sponsored by the US Department of Labor, Employment

and Training Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided such programs are being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the NJDOT Division of Civil Rights prior to commencing work on the positions covered by the Contractor's training program. The Division will review guidelines developed by the Contractor for approval or disapproval in accordance with the Training Guideline Approval Process described in the "Revised Standard Training Guidelines". The Division will also review existing guidelines for revision based on the same process.

(3) It is the intention of these provisions that training be provided in construction crafts rather than clerk-typist or secretarial-type positions. Training is permitted in lower level management positions (e.g., timekeepers), where the training is oriented toward project site applications. Training in semi-skilled laborer positions is permitted provided that significant and meaningful training is available on the project site. Some offsite, classroom training (e.g., safety, first aid instruction) may be permitted as long as such training is an integral part of an approved training program and does not comprise a significant part of the overall training.

e. Reimbursement of the Contractor for Providing Training

(1) The Contractor will be credited for each apprentice or trainee employed on the construction site who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such apprentices or trainees as provided hereinafter. Payment will be made under the pay item Trainees at the bid price in the Proposal per person-hour of training given an employee on this contract in accordance with an approved training program. If approved, payment will be made for training persons in excess of the number specified herein. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other sources do not specifically prohibit the Contractor from receiving other reimbursement. Offsite, classroom training reimbursement may only be made to the Contractor when the company does one or more of the following and the apprentices or trainees are concurrently employed on a Federal-aid project: contributes to the cost of the training and/or provides instruction to apprentices or trainees or pays their wages during the offsite, classroom training (e.g., safety, first aid instruction) period.

(2) The Contractor shall pay apprentices and trainees according to the project-specific New Jersey Department of Labor Prevailing Wage Rate Determination for the project.

f. Documentation Required to be Signed by Apprentices or Trainees and provided to NJDOT

(1) At the start of training, the Contractor shall provide the Resident Engineer and each apprentice or trainee with an applicable "Training Guideline" and, at the conclusion of training, an accurate and complete "Training Certificate for Reporting Hours to NJDOT", showing hours of training satisfactorily completed.

(2) The Contractor shall maintain and submit an accurate and complete "NJDOT Contractor's 1409 Quarterly Training Report" to the Resident Engineer within ten (10) days of the end of each training quarter (e.g., January 10, April 10, July 10, October 10); a copy shall also be given to each apprentice or trainee.

(3) The Contractor shall maintain and submit accurate and complete "Biweekly Training Reports" to the Resident Engineer, and each apprentice or trainee, as periodic reports documenting performance under these Training Special Provisions.

g. Training and Promotion

(1) The Contractor shall assist in locating, qualifying, and increasing the skills of minority and female employees, and applicants for employment.

(2) The Contractor shall advise employees and applicants for employment of available training programs and entrance requirements.

(3) The Contractor shall periodically review the training and promotion potential of minority and female employees and encourage eligible employees to apply for such training and promotion.

h. Determining Good Faith Compliance

(1) Per the approved program or guideline, the Contractor shall provide Maximum Available Training to apprentices and trainees by beginning their training as soon as feasible with the start of craft work utilizing the skill involved on the project construction site and by retaining them as long as training opportunities exist in their crafts or until their training program positions are completed.

(2) The Contractor shall recall apprentices or trainees released due to

reductions in force when the work scope permits and they are available to return. When they are unavailable to resume training on the project site, the Contractor shall submit written proof of recall efforts and replacement candidates and/or positions in a timely manner. The Contractor shall not terminate apprentices or trainees prior to completion of their training program positions without NJDOT consultation and authorization. Apprentices or trainees are not required to be on board for the entire length of the contract.

(3) The Contractor shall have fulfilled the contractual responsibilities under these Training Special Provisions if the company has provided Acceptable Training to the number of apprentices or trainees specified in this contract and/or by providing the remaining hours required to complete training positions begun by apprentices or trainees on other projects. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

(4) The Contractor shall be responsible for demonstrating all steps that have been taken in pursuance of enrolling minorities and females in the training program positions, prior to a determination as to whether the Contractor is in compliance with these Training Special Provisions.

(5) The Contractor shall submit to the Resident Engineer written training program summaries at the 50% time and/or cost stage of the contract and also prior to project completion, describing all good faith actions and particularly addressing Maximum Available Training for incomplete training positions, per the procedure found in the revised "Instructions for Implementing the Training Special Provisions".

i. Enforcement Measures and Contractor's Rating

(1) Payment will not be made if either the failure to provide the required training or the failure to hire the apprentice or trainee as a journeyperson is caused by the Contractor and evidences a lack of good faith on the part of the Contractor in meeting the requirements of these Training Special Provisions.

(2) Per established procedures and scheduled Contract Compliance Reviews, the Contractor's performance will be rated and reviewed periodically by the Department.

(3) Noncompliance with these Training Special Provisions may be cause for delaying or withholding monthly and final payments, pending corrective and appropriate measures by the Contractor to the satisfaction of the Department, per Item 1d of these EEO Special Provisions.

8. Unions

If the Contractor relies in whole or in part upon unions as a source of employees, the Contractor will make maximum effort to obtain the cooperation of such unions to increase opportunities for minorities and females within the unions, and to effect such union referrals to the construction project. Actions by the Contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The Contractor will use maximum effort to develop, in cooperation with the unions, joint training programs aimed at qualifying more minorities and females for union membership and increasing their skills in order to qualify for higher paying employment.

b. The Contractor will use maximum effort to incorporate an equal employment opportunity clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, or national origin.

c. The Contractor will obtain information concerning the referral practices and policies of the labor unions except that to the extent such information is within the exclusive possession of the labor unions and they refuse to furnish this information to the Contractor, the Contractor shall so certify to the Department and shall set forth what efforts have been made to obtain this information.

d. In the event the unions are unable to provide the Contractor with a reasonable flow of minority and female referrals within the time limit set forth in the collective bargaining agreement, the Contractor will through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, or national origin, making full efforts to obtain qualified and/or qualifiable minorities and females. (The US Department of Labor has held that it shall be no excuse that the union with which the Contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees). In the event the union referral practice prevents the Contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such Contractor shall immediately notify the Department.

9. Subcontracting

a. The Contractor will use maximum effort to solicit bids from and to utilize minority subcontractors or subcontractors with meaningful minority and female representation among their employees. Contractors may use lists of minority-owned construction firms as issued by the Department.

b. The Contractor will use maximum effort to ensure subcontractor compliance with the equal employment opportunity obligations.

10. Documents and Reports

a. The Contractor will maintain such documents as are necessary to determine compliance with the contract's equal employment opportunity requirements. Documents will include the following:

(1) the number of minorities, non-minorities, and females employed in each work classification on the Project.

(2) the progress and efforts being made in cooperation with unions to increase employment opportunities for minorities and females (applicable only to Contractors who rely in whole or in part on unions as a source of their work force).

(3) the progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees, and

(4) the progress and efforts being made in securing the services of minority and female subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. All such documents must be retained for a period of 3 years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the Department and the Federal Highway Administration.

c. The Contractor and each subcontractor will complete and submit monthly, except July, to the Department Form T-AD-1276 Monthly Project Manning Report. The FHWA-1391 July report is of special interest to the Department and FHWA; therefore it must be submitted to the Resident Engineer not later than 5 calendar days following the end of July. Payments due the Contractor will be reduced by $100 per day for each day after August 5 that the 1391 Form has not been submitted.

SPECIAL CONTRACT PROVISIONS FOR INVESTIGATING, REPORTING AND RESOLVING EMPLOYMENT DISCRIMINATION AND SEXUAL HARASSMENT COMPLAINTS

The contractor hereby agrees to the following requirements in order to implement fully the nondiscrimination provisions of the Supplemental Specifications.

The Contractor agrees that in instances when it receives from any person working on the project site a verbal or written complaint of employment discrimination, prohibited under N.J.S.A. 10:5-1 et seq., 10:2-1 et seq., 42 U.S.C. 2000(d) et seq., 42 U.S.C. 2000 (e) et seq. and Executive Order 11246, it shall take the following actions:

1. Within one (1) working day commence an investigation of the complaint which shall include but not be limited to interviewing the complainant, the respondent, and all possible witnesses to the alleged act or acts of discrimination or sexual harassment.

2. Prepare and keep for its use and file a detailed written investigative report which includes the following information:

   a) Investigatory activities and findings.

   b) Dates and parties involved and activities involved in resolving the complaint.

   c) Resolution and corrective action taken if discrimination or sexual harassment is found to have taken place.

   d) A signed copy of resolution of complaint by complainant and contractor.

   In addition to keeping in its files the above-noted detailed written investigative report, the contractor shall keep for possible future review by the Department all other records, including but not limited to, interview memos and statements.

3. Upon the request of the Department, provides to the Department within ten (10) calendar days a copy of its detailed written investigative report and all other records on the complaint investigation and resolution.

4. Take appropriate disciplinary action against any contractor employee, official or agent who has committed acts of discrimination or sexual harassment against any contractor employee or person working on the project. If the person committing the discrimination is a subcontractor employee, then the contractor is required to attempt to effectuate corrective and/or disciplinary action by the subcontractor in order to establish compliance with project's contract requirements.

5. Take appropriate disciplinary action against any contractor employee, official or agent who retaliates, coerces or intimidates any complaint and/or person who provides information or assistance to any investigation of complaints of discrimination or sexual harassment. If the person retaliating, coercing or intimidating a complainant or other person assisting an investigation is a subcontractor's employee, then the contractor is required to attempt to effectuate corrective and/or disciplinary action by the subcontractor in order to establish compliance with the project's contract requirements.
6. Ensure toe the maximum extent possible that the privacy interests of all person who give confidential information in aid of the contractor's employment discrimination investigation are protected.

In conjunction with the above requirements, the contractor shall develop and post a written sexual harassment policy for its work force.

Failure by the contractor to comply with the above requirements may be cause for the New Jersey Department of Transportation to institute against the contractor any and all enoforcement proceedings and/or sanctions authorized by the contract or by state and/or federal law.

ASBESTOS

ABATEMENT

SPECIFICATIONS

Rt. 47/40 Sec 1&6 Pages 1 thru 35

SECTION 02082

ENVIRONMENTAL HAZARDS ABATEMENT

PART 1

1 - GENERAL

A. The scope of work will require all asbestos containing materials to be abated in the identified building. The following table is a general reference list of ACM identified in the building. This general reference list is not all-inclusive. The intent of this list and abatement work is to remove the asbestos from an area and make the area "asbestos-free".

Parcel 4A-X4C, Route 47 / 40, Section 1 & 6, Malaga, NJ			
ACM	**Location**	**Approximate Quantity**	**Percent Asbestos**
Exterior Stucco	Exterior	1,580 sq. ft.	1.6% Chrysotile
Interior Stucco	Foyer	200 sq. ft.	1.3% Chrysotile
Window caulking	Parts room 4 – glass block window	1 window	2.1% Chrysotile
Drywall compound*	Parts room 2, 3, 5, hallway 2, storage closet	125 sq. ft.	1.8% Chrysotile
Flashing	Flat roof seam, perimeter of chimney	40 sq. ft.	3.8% Chrysotile
Rubber roofing	Flat roof	180 sq. ft.	1.4% Chrysotile
Window glazing	Parts room 1, 2, 3, 5	7 windows	2.1% Chrysotile
Window glazing	Parts room 1, 2, 3, 5	7 windows	2.1% Chrysotile

*** - Drywall compound is estimated as 10% of the total drywall which shall be abated.**

Parcel 33, Route 47 / 40, Section 7, Malaga, NJ			
ACM	**Location**	**Approximate Quantity**	**Percent Asbestos**
4" aircell pipe insulation	Boiler / Supply room	3 lin. ft.	Assumed

6" aircell pipe insulation	Boiler room	35 lin. ft.	65% Chrysotile
8" aircell pipe insulation	Boiler room	65 lin. ft.	80% Chrysotile
16" aircell pipe insulation	Boiler room	31 lin. ft.	80% Chrysotile
Mudded fittings	Boiler room	29 fittings	20% Chrysotile
Boiler tank insulation	Boiler room	150 sq. ft.	65% Chrysotile
9 x 9 gray floor tile	Kitchen	198 sq. ft.	3.7% Chrysotile
9 x 9 gray floor tile mastic	Kitchen	198 sq. ft.	1.4% Chrysotile
9 x 9 red streaked floor tile	Class room 7	510 sq. ft. (combined)	2.5% Chrysotile
9 x 9 gray streaked floor tile	Class room 7		5.3% Chrysotile
9 x 9 green streaked floor tile	Class room 8	650 sq. ft.	4.2% Chrysotile

Parcel 35C, Route 47 / 40, Section 12, Malaga, NJ			
ACM	**Location**	**Approximate Quantity**	**Percent Asbestos**
9 x 9 brown floor tile	Basement	750 sq. ft.	4.8% Chrysotile
9 x 9 brown floor tile mastic	Basement	750 sq. ft.	2.5% Chrysotile
9 x 9 tan floor tile	Basement	750 sq. ft.	4.3% Chrysotile
9 x 9 tan floor tile mastic	Basement	750 sq. ft.	3.2% Chrysotile
Blue square linoleum	Kitchen	180 sq. ft.	25% Chrysotile
Porch roof flashing	Porch roof	20 sq. ft.	2.5% Chrysotile
Underlayment with tar (under white rolled roofing)	Porch roof	50 sq. ft.	2.0% Chrysotile
Main roof flashing (between kitchen & bedroom siding)	Roof	40 sq. ft.	2.5% Chrysotile

B. L. Robert Kimball and Associates, Inc. (Kimball) is New Jersey Department of Transportation Consultant for this project. The Contractor shall notify

Kimball prior to commencement of any work. Point of contract for Kimball is *Daniel Davis* and can be reached at the office (412) 262-5400, cell phone (412) 327-3320, faxed at (412) 262-3036 or e-mailed at davisd@lrkimball.com.

1.1 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

B. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

1.	ANSI Z9.2	(1979; R 1991) Fundamentals Governing the Design and Operation of Local Exhaust Systems
2.	ANSI Z88.2	(1992) Respiratory Protection American Society For Testing And Materials (ASTM)
3.	ASTM C 732	(1982; R 1987) Aging Effects of Artificial Weathering on Latex Sealants
4.	ASTM D 522	(1993; Rev. A) Mandrel Bend Test of Attached Organic Coatings
5.	ASTM D 1331	(1989) Surface and Interfacial Tension of Solutions of Surface-Active Agents
6.	ASTM D 2794	(1993) Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
7.	ASTM E 84	(1994) Surface Burning Characteristics of Building Materials
8.	ASTM E 96	(1994) Water Vapor Transmission of Materials
9.	ASTM E 1368	(1990) Visual Inspection of Asbestos Abatement Projects

C. CODE OF FEDERAL REGULATIONS (CFR)

1.	29 CFR 1910.134	Respiratory Protection
2.	29 CFR 1926.51	Sanitation

3.	29 CFR 1926.200	Accident Prevention Signs and Tags
4.	29 CFR 1926.59	Hazard Communication
5.	29 CFR 1926.451	Scaffolding
6.	29 CFR 1926.1101	Asbestos, Tremolite, Anthophyllite, Actinolite
7.	40 CFR 61-SUBPART A	General Provisions
8.	40 CFR 61-SUBPART M	National Emission Standard for Asbestos
9.	40 CFR 763	Asbestos Containing Material in Schools
10.	49 CFR 171 and 172	DOT regulations for the transportation of asbestos-containing materials

D. ENVIRONMENTAL PROTECTION AGENCY (EPA)

1.	EPA 560/5-85-024	Guidance for Controlling Asbestos Containing Materials in Buildings

E. UNDERWRITERS LABORATORIES INC. (UL)

1.	UL 586	(1990) High-Efficiency, Particulate, Air Filter Units

F. STATE OF NEW JERSEY

1. Uniform Construction Code Act. (New Jersey S.A. 52-17D-119 et.seq., P.L. 1984)

2. Asbestos Control and Licensing Act. (NJSA 34:5A-32 et.seq., P.L. 1984)

3. Asbestos Hazard Abatement Subcode for Educational Facilities - Subchapter 8. N.J.A.C. 5:23-8 New Jersey Department of Community Affairs Division of Housing and Development Bureau of Construction Code Enforcement CN 816 Trenton, New Jersey 08625-0816.

4. Asbestos Licenses and Permits N.J.A.C. 12:120-1,2,3,5,7 and 8:60-1,2,3,4,5,7 New Jersey Department of Labor Division of Workplace Standards CN 504 Trenton, New Jersey 08625-0504.

5. Asbestos Training Courses N.J.A.C. 8:60-2 and 6, 12:120-2 and 6 New Jersey Department of Health Asbestos Control Project, Training Unit CN 360 Trenton, NJ 08625-0360

6. Solid Waste Management Act. (NJSA 13:1E-1, 13:109, et.seq., as amended)

7. Disposal Regulations N.J.A.C. 7:26 New Jersey Department of Environmental Protection, Division of Waste Management, Bureau of Field Operations CN 028 Trenton, NJ 08625-0805.

8. Control and Prohibition of Air Pollution by Toxic Substances, New Jersey Department of Environmental Protection, N.J.A.C. Title 7, Chapter 27, Subchapter 17, effective date: December 17, 1979.

9. Asbestos Subchapter of the New Jersey Safety and Health Standards for Public Employees, N.J.A.C. 12:100 et.seq.

1.2 DEFINITIONS

A. ACM

1. Asbestos Containing Materials. Any material or product which contains more than one (1) percent asbestos.

B. Aggressive Air Sampling Techniques

1. Air monitoring samples collected while leaf blowers, fans, or other such devices are used to generate air turbulence within the work area.

C. Amended Water

1. Water containing a wetting agent or surfactant with a maximum surface tension of 2.9 Pa (29 dynes per square centimeter) when tested in accordance with ASTM D 1331.

D. Area Sampling

1. Sampling of asbestos fiber concentrations which approximates the concentrations of asbestos in the theoretical breathing zone but is not actually collected in the breathing zone of an employee.

E. Asbestos

1. The term asbestos includes Chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, and actinolite asbestos and any of these

minerals that has been chemically treated or altered. Materials are considered to contain asbestos if the asbestos content of the material is determined to be at least one percent.

F. Asbestos Control Area

1. That area where asbestos removal operations are performed which is isolated by physical boundaries, which assist in the prevention of the uncontrolled release of asbestos dust, fibers, or debris.

G. Asbestos Fibers

1. Those fibers having an aspect ratio of at least 3:1 and longer than 5 micrometers as determined by National Institute for Occupational Safety and Health (NIOSH) Method 7400.

H. Asbestos Permissible Exposure Limit (PEL)

1. 0.1 fibers per cubic centimeter of air as an 8-hour time weighted average measured in the breathing zone as defined by 29 CFR 1926.1101 or other Federal legislation having legal jurisdiction for the protection of workers health.

I. **Authority**

1. New Jersey Department of Transportation.

J. Background

1. The ambient airborne asbestos concentration in an uncontaminated area as measured prior to any asbestos hazard abatement efforts. Background concentrations for other (contaminated) areas are measured in similar but asbestos free locations.

K. Contractor

1. The Contractor is that individual, or entity under contract to the Authority to perform the herein listed work.

L. Encapsulation

1. The abatement of an asbestos hazard through the appropriate use of chemical encapsulants.

M. Encapsulants

1. Specific materials in various forms used to chemically or physically entrap asbestos fibers in various configurations to prevent these fibers from becoming airborne. There are four types of encapsulants as follows which must comply with performance requirements as specified herein.

    a. Removal Encapsulant (can be used as a wetting agent)

    b. Bridging Encapsulant (used to provide a tough, durable surface coating to asbestos containing material)

    c. Penetrating Encapsulant (used to penetrate the asbestos containing material encapsulating all asbestos fibers and preventing fiber release due to routine mechanical damage)

    d. Lock-Down Encapsulant (used to seal off or "lock-down" minute asbestos fibers left on surfaces from which asbestos containing material has been removed).

N. Friable Asbestos Material

1. Any material greater than one percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

O. HEPA Filter Equipment

1. High efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall retain 99.97 percent of particles 0.3 microns or larger as indicated in UL 586.

P. Negative Pressure Enclosure (NPE)

1. That engineering control technique described as a negative pressure enclosure in 29 CFR 1926.1101.

Q. Non-friable Asbestos Material

1. Any material that contains more than one percent asbestos in which the fibers have been immobilized by a bonding agent, coating, binder, or other material so that the asbestos is well bound and will not normally release asbestos fibers during any appropriate use, handling, storage or transportation. Non-friable materials are defined as either:

    a. Category I - means asbestos containing packing, gaskets, resilient floor coverings and asphalt roofing products.

b. Category II - any material, excluding Category I non-friable ACM, containing more than one percent asbestos such as transite, galbestos and window caulking.

R. Powered Air Purifying Respirator (PAPR)

1. A positive-pressure respirator which employs a portable, rechargeable battery pack and blower to force air from the work area through a HEPA filter cartridge, where the air is cleaned and supplied to the wearer's breathing zone.

S. Personal Sampling

1. Air sampling which is performed to determine asbestos fiber concentrations within the breathing zone of a specific employee, as performed in accordance with 29 CFR 1926.1101.

T. Qualified Person (QP)

1. That qualified person hired by the Contractor to perform the required contractor's tasks, who has successfully completed training and is therefore accredited under a legitimate State Model Accreditation Plan as described in 40 CFR 763 as a Building Inspector, Contractor/Supervisor Abatement Worker, and Asbestos Project Designer; and has successfully completed the National Institute of Occupational Safety and Health (NIOSH) 582 course "Sampling and Evaluating Airborne Asbestos Dust" or equivalent. The QP must be qualified to perform visual inspections as indicated in ASTM E 1368. The QP shall be appropriately licensed in the State of New Jersey.

U. Regulated ACM

1. Friable asbestos containing material, category I non-friable ACM that has become friable, Category I non-friable ACM that will be or has been subject to sanding, grinding, cutting, or abrading, or Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by NESHAP.

V. Authority's Consultant (AC)

1. That qualified person employed directly by the Authority to monitor, sample, and inspect the work or in some other way advises the Authority. The AC is normally a private consultant hired by the Authority and is L. Robert Kimball and Associates, Inc. (Kimball).

Point of contract for Kimball is *Daniel Davis* and can be reached at (412) 262-5400, cell phone (412) 327-3320, or faxed at (412) 262-3036.

W. Time Weighted Average (TWA)

1. The TWA is an 8-hour time weighted average airborne concentration of asbestos fibers.

X. Wetting Agent

1. A chemical added to water to reduce the water's surface tension thereby increasing the water's ability to soak into the material to which it is applied. An equivalent wetting agent must have a surface tension of at most 2.9 Pa (29 dynes per square centimeter) when tested in accordance with ASTM D 1331.

1.3 REQUIREMENTS

A. Special Conditions

1. The Contractor shall be responsible for compliance with any and all OSHA, EPA, and New Jersey regulations as referenced in these Specifications. Furthermore, the Contractor shall at all times conform to any additional requirements set forth in these Specifications where they may be more stringent than the minimum required by regulation. The Authority or AC, and their employees or designated representatives assume no responsibility for the management of or control over the Contractor's safety and health program activities. The Contractor shall ensure that his safety and health programs comply with all applicable regulations and adequately protect the well-being of his employees.

2. The Contractor shall pay all license fees and royalties and assume all cost fees and cost incidents to the use in the performance of the work of any invention, design, process patent, or device which is the patent rights or copyrights held by the other. The Contractor shall indemnify and hold harmless the Authority and the AC and anyone directly or indirectly employed by any of them from and against all claims, damages, losses, and expenses (including attorney's fees) arising out of any infringement of patent rights or copyrights incident to the use in the performance of this work or resulting from the incorporation in the work of any invention, design, process, product, or device. This indemnification and hold harmless obligation shall be separate from and independent of any other obligations of the contractor to indemnify and hold the Authority and the AC and anyone directly or indirectly employed by them harmless from and against all claims, cost, obligations, or expenses.

B. Regulatory Compliance

1. The Contractor shall assume full responsibility and liability for compliance with all applicable Federal, New Jersey, and County regulations pertaining to work practices, hauling, disposal, and protection of the site. The Contractor is responsible for providing medical examinations and maintaining records of personnel as required by the applicable Federal, New Jersey, and County regulations. The Contractor shall hold the Authority and AC harmless for failure to comply with any applicable work, hauling, disposal, safety, health, or other regulations on the part of himself, his employees, or his subcontractors.

C. Asbestos Removal - Documentation And Notification

1. Permits and Notification

a. The Contractor will prepare all notifications required by the New Jersey, and EPA based upon these Specifications, and will submit them to the appropriate agency. Send written notification required by N.J.A.C. 5:23-8 to the Department of Community Affairs within three (3) days of issuance of the construction permit for asbestos abatement. Send notification to:

New Jersey Department of Community Affairs
Division of Codes and Standards
Bureau of Code Services
Asbestos/Lead Safety Unit
101 South Broad Street
PO Box 816
Trenton, NJ 08625-0816

b. The Contractor shall obtain all permits required by Federal, New Jersey, and/or County regulatory agencies or jurisdictions for the transportation and disposal of asbestos-containing materials. The removal of asbestos shall require a construction permit in accordance with N.J.A.C. 5:23-8.5. Additionally, a demolition permit must be obtained pursuant to N.J.A.C. 5:23-2.

c. The Contractor shall post one copy of all permits at the work site and keep on file at the Contractor's office one copy of each.

d. The Contractor shall submit written certification to the AC prior to the commencement of work that the required permits, site location, and arrangements for transportation and disposal of asbestos-containing wastes have been made.

2. Contractor Documentation

a. The Contractor shall submit copies of all transport manifests, trip tickets and disposal receipts to the AC for all asbestos-containing wastes removed from the property, within ten (10) days of such removal.

b. The Contractor shall submit documentation to the AC prior to the commencement of work that the contractor's employees, including foreman, supervisors, and any other company personnel or agents who may be exposed to airborne asbestos have received the following:

(1) Training as required by OSHA 29 CFR 1926.1101 (k) (3).

(2) Medical surveillance as required by OSHA 20 CFR 1926.1101(m) and have been determined by a physician to be physically able to wear required respiratory protection.

(3) Respirator fit testing as required by OSHA 29 CFR 1926.1101 (h) (4).

(4) New Jersey Asbestos and Permits.

c. The Contractor shall submit to the AC prior to the commencement of Work the names and Social Security numbers of the Contractor's employees, as defined in Section 1.3.3.

d. The Contractor shall submit the identity and qualifications of his designated "competent person" to be on-site during removal work as required by OSHA 29 CFR 1926.1101 (e) (6) (ii) and the individual or firm that will be conducting his employee exposure monitoring as required by OSHA 29 CFR 1926.1101 (f) to the AC prior to the commencement of work.

e. The Contractor shall have in his possession, on-site, copies of the above referenced regulations, as well as, a copy of the Contractor's asbestos training and work practices manual, written respirator program, and these Specifications.

f. The Contractor shall maintain a daily log within the Decontamination Unit documenting the dates and times of the following items: visitations; authorized and unauthorized Personnel; by name, entering and leaving the work area.

g. The QP shall maintain a daily project logbook documenting the following:

(1) Meetings: purpose, attendees, discussion (brief)

(2) Inspection of work area; preparation, prior to start of removal and daily, thereafter

(3) Special or unusual events, i.e., barrier breaching, equipment failures

(4) Removal of any polyethylene barriers

(5) Contractor's inspections prior to encapsulation or removal

(6) Quantity of asbestos abatement completed

(7) Personal air monitoring results

(8) Removal of waste materials from work area

(9) Decontamination of equipment (list items)

(10) Contractor final inspection

3. Licenses

a. Maintain current licenses as required by applicable Federal, and New Jersey regulatory agencies or jurisdictions for the removal, transporting, disposal, and/or other regulated activity relative to the work of this contract.

b. Posting and Filing of Licenses: Maintain two (2) copies of applicable Federal, and New Jersey licenses described above. Post one copy of each at the job site and keep on file in Subcontractor's office one copy of each.

D. Description of Work

1. The work covered by this section includes the handling and control of asbestos containing materials and describes some of the resultant procedures and equipment required to protect workers, the environment and occupants of the building or area, or both, from contact with airborne asbestos fibers. The work also includes the disposal of any asbestos containing materials generated by the work. More specific operational procedures shall be outlined in the Asbestos Hazard Abatement Plan called for elsewhere in this specification.

The scope of work will require all asbestos containing materials to be abated in the identified building. The following table is a general reference list of ACM identified in the building. This general reference list is not all-inclusive. The intent of this list and abatement work is to remove the asbestos from an area and make the area "asbestos-free".

Parcel 4A-X4C, Route 47 / 40, Section 1 & 6, Malaga, NJ			
ACM	**Location**	**Approximate Quantity**	**Percent Asbestos**
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*** - Drywall compound is estimated as 10% of the total drywall which shall be abated.**

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ACM	**Location**	**Approximate Quantity**	**Percent Asbestos**
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Parcel 35C, Route 47 / 40, Section 12, Malaga, NJ			
ACM	**Location**	**Approximate Quantity**	**Percent Asbestos**
9 x 9 brown floor tile	Basement	750 sq. ft.	4.8% Chrysotile
9 x 9 brown floor tile mastic	Basement	750 sq. ft.	2.5% Chrysotile
9 x 9 tan floor tile	Basement	750 sq. ft.	4.3% Chrysotile
9 x 9 tan floor tile mastic	Basement	750 sq. ft.	3.2% Chrysotile
Blue square linoleum	Kitchen	180 sq. ft.	25% Chrysotile
Porch roof flashing	Porch roof	20 sq. ft.	2.5% Chrysotile
Underlayment with tar (under white rolled roofing)	Porch roof	50 sq. ft.	2.0% Chrysotile
Main roof flashing (between kitchen & bedroom siding)	Roof	40 sq. ft.	2.5% Chrysotile

2. The Contractor shall be required to remove all asbestos containing debris associated with the above referenced materials. Under normal conditions non-friable or chemically bound materials containing asbestos would not be considered hazardous; however, this material may release airborne asbestos fibers during the demolition and therefore must be handled in accordance with the removal and disposal procedures as specified herein.

3. The Contractor shall not damage areas outside of their work areas. Close coordination with the Authority and AC is required.

E. Medical Requirements

1. Provide medical requirements including but not limited to medical surveillance and medical record keeping as listed in 29 CFR 1926.1101.

   a. Medical Examinations

      1) Before exposure to airborne asbestos fibers, provide workers with a comprehensive medical examination as required by 29 CFR 1926.1101 or other pertinent New Jersey or County directives. This requirement must have been satisfied within the 12 months prior to the start of work on this contract. The same medical examination shall be given on an annual basis to employees engaged in an occupation involving asbestos and within 30 calendar days before or after the termination of employment in such occupation. Specifically identify x-ray films of asbestos workers to the consulting radiologist and mark medical record jackets with the word "ASBESTOS."

   b. Medical Records

      1) Maintain complete and accurate records of employees' medical examinations, medical records, and exposure data for a period of 50 years after termination of employment and make records of the required medical examinations and exposure data available for inspection and copying to: The Assistant Secretary of Labor for Occupational Safety and Health (OSHA), or authorized representatives of them, and an employee's physician upon the request of the employee or former employee.

F. Training

1. Train all personnel involved in the asbestos control work in accordance with United States Environmental Protection Agency (USEPA), Asbestos Hazard Emergency Response Act (AHERA) training criteria or New Jersey training criteria whichever is more stringent. The Contractor shall document the training by providing: dates of training, training entity, course outline, names of instructors, and qualifications of instructors upon request by the Authority. Furnish each employee with respirator training and fit testing as required by 29 CFR 1926.1101. Fully cover engineering and other hazard control techniques and procedures.

G. Permits, Licenses, and Notifications

1. Obtain necessary permits and licenses in conjunction with asbestos removal, encapsulation, hauling, and disposition, and furnish notification

of such actions required by Federal and New Jersey authorities prior to the start of work. Notify the United States Environmental Protection Agency (USEPA) Region 2, and the AC in writing 10 working days prior to commencement of work in accordance with 40 CFR 61-SUBPART M.

H. Environment, Safety and Health Compliance

1. In addition to detailed requirements of this specification, comply with those applicable laws, ordinances, criteria, rules, and regulations of Federal and New Jersey authorities regarding handling, storing, transporting, and disposing of asbestos waste materials. Comply with the applicable requirements of the current issue of 29 CFR 1926.1101, 40 CFR 61-SUBPART A, and 40 CFR 61-SUBPART M. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting the work. Where the requirements of this specification, applicable laws, rules, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirement shall apply. The following laws, ordinances, criteria, rules and regulations regarding removal, handling, storing, transporting and disposing of asbestos materials apply:

   a. OSHA

   b. EPA

   c. DOT

   d. NJAC

   e. NJDEP

I. Respirator Program

1. Establish and implement a respirator program as required by ANSI Z88.2, 29 CFR 1926.1101, and 29 CFR 1926.103. Submit a written description of the program to the AC.

J. Asbestos Hazard Control Supervisor

1. The Contractor shall be represented on site by a supervisor, trained using the model Contractor accreditation plan as indicated in the Federal statutes for all portions of the herein listed work.

K. Hazard Communication

1. Adhere to all parts of 29 CFR 1926.59 and provide the AC with a copy of the Material Safety Data Sheets (MSDS) for all materials brought to the site.

L. Contingency Plans and Arrangements

1. Prepare a contingency plan for emergencies including, but not limited to, fire, accident, failure of power, failure of air filtration system, or any other event that may occur. Include specific procedures to ensure safe exiting and to provide medical attention in the event of an emergency. Post the telephone numbers and locations of emergency services including fire, ambulance, hospital, police, and power company.

1.4 SUBMITTALS

Submit the following.

A. SD-02, Manufacturer's Catalog Data

1. Local exhaust equipment

2. Vacuums

3. Respirators

4. Pressure differential automatic recording instrument system per NJAC 5:23-8.19

5. Amended water

6. Material Safety Data Sheets (MSDS) for all materials proposed for transport to the project site

7. Encapsulants

8. Fire Extinguishers

9. Scaffolding

B. SD-08, Statements

1. Asbestos hazard abatement plan

2. Testing laboratory

3. Private qualified person documentation

4. Landfill approval

5. Employee training

6. Medical certification requirements

7. Waste shipment records and if applicable exemption report

8. Respiratory Protection Program

9. Hazardous waste manifest

a. Asbestos Hazard Abatement Plan

1) Submit a detailed plan of the safety precautions such as lockout/tagout, fall protection, first aid, and confined space entry procedures and equipment and work procedures to be used in the removal and demolition of materials containing asbestos. The plan shall be prepared, signed, and sealed by the Contractor. Such plan shall include but not be limited to the precise personal protective equipment to be used including, but not limited to, respiratory protection, type of whole-body protection, the location of asbestos control areas including clean and dirty areas, buffer zones, showers, storage areas, change rooms, removal method, interface of trades involved in the construction, sequencing of asbestos related work, disposal plan, type of wetting agent and asbestos sealer to be used, locations of local exhaust equipment, planned air monitoring strategies, *Gantt chart indicating location, times, dates, and types of work to be performed for each location* and a detailed description of the method to be employed in order to control environmental pollution. The plan shall also include (both fire and medical emergency) response plans and the location and use of fire extinguishers. The Asbestos Hazard Abatement Plan must be approved in writing prior to starting any asbestos work. The Contractor shall meet with the AC prior to beginning work, to discuss in detail the Asbestos Hazard Abatement Plan, including work procedures and safety precautions. Once approved by the AC, the plan will be enforced as if an addition to the specification. The AC prior to starting work shall identify any changes required in the specification as a

result of the plan specifically in the plan to allow for free discussion and approval.

b. Testing Laboratory

1) Submit the name, address, and telephone number of each testing laboratory selected for the analysis, and reporting of airborne concentrations of asbestos fibers along with evidence that each laboratory selected holds the appropriate New Jersey license and/or permits and certification that each laboratory is American Industrial Hygiene Association (AIHA) accredited and that persons counting the samples have been judged proficient by current inclusion on the AIHA Asbestos Analysis Registry (AAR) and successful participation of the laboratory in the Proficiency Analytical Testing (PAT) Program. Where analysis to determine asbestos content in bulk materials or transmission electron microscopy is required, submit evidence that the laboratory is accredited by the National Institute of Science and Technology (NIST) under National Voluntary Laboratory Accreditation Program (NVLAP) for asbestos analysis.

c. Qualified Person Documentation

1) Submit the name, address, and telephone number of the Qualified Person (QP) selected to prepare the Asbestos Hazard Abatement Plan, direct monitoring and training, and documented evidence that the QP has successfully completed training in and is accredited and where required is certified as, a Building Inspector, Contractor/Supervisor Abatement Worker, and Asbestos Project Designer as described by 40 CFR 763 or has successfully completed the National Institute of Occupational Safety and Health (NIOSH) 582 course "Sampling and Evaluating Airborne Asbestos Dust" or equivalent. The QP shall be appropriately licensed in the State of New Jersey.

d. Landfill Approval

1) Submit written evidence that the landfill for disposal is approved for asbestos disposal by the USEPA and New Jersey regulatory agency(s). Submit to the AC, waste shipment records, prepared in accordance with Federal regulations, signed and dated by an agent of the landfill, certifying the amount of asbestos materials delivered to the landfill, within 3 days after delivery.

e. Employee Training

1) Submit certificates signed by each employee indicating that the employee has received training in the proper handling of materials and wastes that contain asbestos in accordance with 40 CFR 763 and New Jersey requirements; understands the health implications and risks involved, including the illnesses possible from exposure to airborne asbestos fibers; understands the use and limits of the respiratory equipment to be used; and understands the results of monitoring of airborne quantities of asbestos as related to health and respiratory equipment as indicated in 29 CFR 1926.1101 on an initial and annual basis.

f. Medical Certification

1) Provide a written certification for each worker and supervisor, signed by a licensed physician indicating that the worker and supervisor has met or exceeded all of the medical prerequisites listed herein and in 29 CFR 1926.1101 and 29 CFR 1926.103 as prescribed by law.

g. Respiratory Protection Program

1) Submit a written program manual or operating procedure including methods of compliance with regulatory statutes.

C. SD-12, Field Test Reports

1. Air sampling results

2. Pressure differential recordings for local exhaust system per

3. Asbestos disposal quantity report

4. Clearance sampling

a. Air Sampling Results

1. Complete fiber counting and provide results to the QP and AC for review within 16 hours of the "time off" of the sample pump. Notify the AC immediately of any airborne levels of asbestos fibers in excess of the acceptable limits. Submit sampling results to the AC and the affected Contractor employees where required by law within 3 working days,

signed by the testing laboratory employee performing air sampling, the employee that analyzed the sample, and the QP and AC.

2) Pressure Differential Recordings for Local Exhaust System: provide a local exhaust system that creates a negative pressure of at least 0.02 of water relative to the pressure external to the enclosure and operate it continuously, 24 hours a day, until the temporary enclosure of the asbestos control area is removed. Submit pressure differential recordings for each day to the AC.

D. SD-13, Certificates

1. Show compliance with ANSI Z9.2 by providing manufacturers' certifications.

a. Vacuums

b. Water filtration equipment

c. Ventilation systems

d. Other equipment used to contain airborne asbestos fibers

e. Chemical encapsulants sealers

E. SD-18, Records

1. Notifications

2. Rental equipment

3. Respirator program records

4. Permits and licenses

a. Notifications

1) Notify the AC, New Jersey and other appropriate Government agencies in writing 10 working days prior to the start of asbestos work as indicated in applicable laws, ordinances, criteria, rules, and regulations.

b. Rental Equipment

1) Provide a copy of the written notification to the rental company concerning the intended use and possible asbestos contamination of the equipment.

c. Respirator Program Records

1) Submit records of the respirator program as required by ANSI Z88.2, 29 CFR 1926.103, and 29 CFR 1926.1101.

PART 2

2- PRODUCTS

2.1 ENCAPSULANTS

Shall conform to current USEPA requirements, shall contain no toxic or hazardous substances as defined in 29 CFR 1926.59, and shall conform to the following performance requirements.

A. Removal Encapsulants

Requirement	Test Standard
Flame Spread-25, Smoke Emission-50	ASTM E 84
Life Expectancy-20 years	ASTM C 732 Accelerated Aging Test
Permeability-Minimum 0.4 perms	ASTM E 96

B. Lock-down Encapsulant

Requirement	Test Standard
Flame Spread:25, Smoke Emission-50	ASTM E 84
Life Expectancy: 20 years	ASTM C 732 Accelerated Aging Test
Permeability: Minimum 0.4 perms	ASTM E 96
Fire Resistance: Negligible affect on fire resistance rating over 3 hour test (Tested with fireproofing over	ASTM E 119

encapsulant applied directly to steel member)
Bond Strength: 1459 N of force/meter (100 pounds of force/foot) (Tests compatibility with cementitious and fibrous fireproofing) ASTM E 736

PART 3

3 - EXECUTION

3.1 EQUIPMENT

At all times, provide the AC, with at least two complete sets of personal protective equipment as required for entry to and inspection of the asbestos control area. Provide manufacturers' certificate of compliance for all equipment used to contain airborne asbestos fibers.

A. Respirators

1. The Contractor shall administer a respiratory protection program as required by OSHA (29 CFR 1910.134). The Contractor shall provide individual respirators, from those approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services, for each employee. The Contractor shall require all employees to wear Powered Air Purifying Respirators (PAPR) inside the work area for the duration of the project, or unless acceptable levels have been established through air sampling, as performed by the AC. The Contractor shall require that respiratory protection be used at all times there is any possibility of disturbance of asbestos-containing materials whether intentional or accidental, until the area has been cleared for re-occupancy. The Contractor shall not allow the use of single-use, disposal respirators for any purpose.

a. Respirators for Handling Asbestos

1) Provide personnel engaged in pre-cleaning, cleanup, handling, removal and demolition of asbestos materials with respiratory protection as indicated in 29 CFR 1926.1101 and 29 CFR 1926.103.

B. Exterior Whole Body Protection

1. Outer Protective Clothing

a. Provide personnel exposed to asbestos with disposable "non-breathable," whole body outer protective clothing, head coverings, gloves, and foot coverings. Provide disposable plastic or rubber gloves to protect hands. Cloth gloves may be worn inside the plastic or rubber gloves for comfort, but shall not be used alone. Make sleeves secure at the wrists, make foot coverings secure at the ankles, and make clothing secure at the neck by the use of tape.

2. Work Clothing

a. Provide cloth work clothes for wear under the outer protective clothing and foot coverings and either dispose of or properly decontaminate them as recommended by the AC after each use.

3. Eye Protection

a. Provide goggles to personnel engaged in asbestos abatement operations when the use of a full face respirator is not required.

C. Personal Decontamination

1. Provide a temporary, negative pressure unit with a separate decontamination room and clean room with a shower that complies with 29 CFR 1926.1101. Provide a separate decontamination area for personnel required to don and doff whole body protective clothing. Keep street clothing and street shoes a clean area. HEPA vacuum and remove asbestos contaminated disposable protective clothing while still wearing respirators at the boundary of the asbestos work area and seal in impermeable bags or containers for disposal.

D. Warning Signs and Labels

1. Provide warning signs printed in English at all approaches to asbestos control areas. Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide labels and affix to all asbestos materials, scrap, waste, debris, and other products contaminated with asbestos.

a. Warning Sign

1) Provide vertical format conforming to 29 CFR 1926.200, and 29 CFR 1926.1101 minimum 20 by 14 inches displaying the following legend in the lower panel:

Legend	Notation
Danger	1-inch Sans Serif Gothic or Block
Asbestos	1-inch Sans Serif Gothic or Block
Cancer and Lung Disease Hazard	¼ inch Sans Serif Gothic or Block
Authorized Personnel Only	¼ inch Gothic
Respirators and Protective Clothing Are Required in this Area	¼ inch Gothic

2) Spacing between lines shall be at least equal to the height of the upper of any two lines.

b. Warning Labels

1) Provide labels conforming to 29 CFR 1926.1101 of sufficient size to be clearly legible, displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING ASBESTOS DUST MAY
CAUSE SERIOUS BODILY HARM

E. Local Exhaust System

1. Provide a local exhaust system in the asbestos control area in accordance with ANSI Z9.2 and 29 CFR 1926.1101 that will provide at least four air changes per hour inside of the negative pressure enclosure. Local exhaust shall be operated 24 hours per day, until the asbestos control area is removed and shall be leak to the filter and equipped with HEPA filters. Maintain a minimum pressure differential in the control area of minus 0.02 inch of water column relative to adjacent, unsealed areas. Provide continuous 24-hour day monitoring of the pressure differential with a pressure differential automatic recording instrument. The local exhaust system shall terminate out of doors and remote from any public access or ventilation system intakes.

F. Tools

1. Vacuums shall be leak proof to the filter and equipped with HEPA filters. Filters on vacuums shall conform to ANSI Z9.2 and UL 586. Do not use power tools to remove asbestos containing materials unless the tool is equipped with effective, integral HEPA filtered exhaust ventilation systems. Remove all residual asbestos from reusable tools prior to storage or reuse.

G. Rental Equipment

1. If rental equipment is to be used, furnish written notification to the rental agency concerning the intended use of the equipment and the possibility of asbestos contamination of the equipment.

3.2 WORK PROCEDURE

A. Asbestos abatement

1. Perform asbestos related work in accordance with 29 CFR 1926.1101, 40 CFR 61-SUBPART M, NJAC 5:23-8 and as specified herein. Use wet removal procedures. Personnel shall wear and utilize protective clothing and equipment as specified herein. Eating, smoking, drinking, chewing gum, tobacco, or applying cosmetics shall not be permitted in the asbestos work or control areas. Personnel of other trades not engaged in the removal and demolition of asbestos containing material shall not be exposed at any time to airborne concentrations of asbestos unless all the personnel protection and training provisions of this specification are complied with by the trade personnel. If an asbestos fiber release or spill occurs outside of the asbestos control area, stop work immediately, correct the condition to the satisfaction of the AC including clearance sampling, prior to resumption of work.

2. Worker Protection

a. All persons entering the work area shall wear disposable coveralls and NIOSH-approved respirators with HEPA filters. Workers will remove protective equipment prior to leaving the work area and proceed to a remote shower facility for final decontamination.

B. Glovebag Work Procedures

1. Work Area Preparation

a. Abatement will take place in stationary mini-containments or mobile mini-containments built around scaffolding. Containments will be equipped with negative pressure. The work area shall remain off limits to personnel not involved in the asbestos removal project. Warning signs shall be posted at entrances to the work area and on mini-containment entrances. All glovebag abatement shall be performed with a minimum of two (2) workers per glovebag. Glovebag abatement shall be performed in accordance with 29 CFR 1926.1101.

2. Worker Protection

a. All persons entering the work area shall wear disposable coveralls and NIOSH-approved respirators with HEPA filters. Workers will remove protective equipment prior to leaving the work area and proceed to a remote shower facility for final decontamination.

3. Removal of Asbestos-Containing Materials Using Glovebags

a. Remove all asbestos-containing thermal system insulation from the building as herein specified. Remove the insulation within the glovebag using a saw or hand tools in a stationary or mobile mini-containment. A sufficient amount of amended water or removal encapsulant shall be applied to insulation to maintain the material in a wet condition during removal and handling activities. Take reasonable care to prevent the generation of friable material. Do not drop, strike or otherwise generate friable asbestos or airborne asbestos fibers.

b. The Asbestos Contractor's workers shall execute the following step-by-step glovebag procedure:

(1) Slit the top of the glovebag open (if necessary) and cut down the sides to accommodate the size of the pipe (about two inches longer than the pipe diameter).

(2) Place the necessary tools into the pouch located inside the glovebag. This will usually include the bone saw, utility knife, rags, scrub brush, wire cutters, tin snips and precut wettable cloth. Cut out a donut shape in the cloth with the inner diameter of the pipe insulation being removed. Finally, cut a slit in each of the two donuts so they can be slipped around the pipe.

(3) One strip of tape shall be placed along the edge of the open top slit of the glovebag for reinforcement.

(4) Place the glovebag around the section of pipe to be worked on and staple three top together through the reinforcing tape. Staple at intervals of approximately one inch. Next, fold the stapled top flap back and tape it down. This should provide an adequate seal along the top. Next, tape the ends of the glovebag to the pip itself, previously covered with plastic or duct tape.

(5) Using the smoke tube and aspirator bulb, place the tube into the water sleeve (two-inch opening to glovebag). By squeezing the bulb, fill the bag with visible smoke. Remove the smoke tube and tightly, gently squeeze the glovebag and look for smoke leaking out, especially at the top and ends of the glovebag. If leaks are found, they shall be taped closed using duct tape and the bag shall be retested.

(6) Insert the wand from the water sprayer through the water sleeve. Tape the water sleeve tightly around the wand to prevent leakage.

(7) One person places their hands into the long-sleeved gloves while the second person directs the amended water spray at the work.

(8) If the section of pipe is covered with an aluminum jacket, this is removed first using the wire cutters to cut any bands and the tin snips to remove the aluminum. It is important to fold the sharp edges in to prevent cutting the bag when it is placed in the bottom. A box may be put in the bottom of the bag when the tools are placed in, and the metal placed in the box to further protect the bag from being cut.

(9) With the insulation exposed, using the bone saw; cut the insulation at each end of the section to be removed. A bone saw is a serrated heavy-gauge wire with ring-type handles at each end. Throughout this process, amended water or removal encapsulant is sprayed on the cutting area to keep dust to a minimum.

(10) Once the ends are cut, the section of insulation should be slit from end to end using the utility knife. The cut should be made along the bottom of the pipe and amended water continuously supplied. Again, care should be taken when using the knife not to puncture the bag. Some insulation may have wire to be clipped as well.

(11) Rinse all tools with water inside the bag and place back in pouch.

(12) The insulation can now be lifted off the pipe and gently placed in the bottom of the bag, while the side of the insulation adjacent to the pipe is being thoroughly wetted.

(13) Using the scrub brush, rags and amended water, scrub and wipe down the exposed pipe.

(14) Wet the donut-shaped pieces of wettable cloth over the exposed ends of insulation remaining in the pipe.

(15) Remove the water wand from the water sleeve, insert at the encapsulant wand and encapsulate the pipe and the inside of the glovebag.

(16) Remove the encapsulant want from the water sleeve and attach the small nozzle from the HEPA filtered vacuum only briefly to collapse the bag.

(17) Remove the vacuum nozzle and twist the water sleeve closed and seal with tape.

(18) From outside the bag, pull the tool pouch away from the bag. Place tape over the twisted portion and then cut the tool bag from the glovebag, cutting through the twisted/taped section. In this manner, the contaminated tools may be placed directly into the next glovebag without cleaning. Alternatively, the tool pouch with the tools can be placed in a bucket of water, opened underwater, and the tools cleaned and dried without releasing asbestos into the air. Rags and the scrub brush cannot be cleaned in this manner and should be discarded with the asbestos waste. Remove if possible and emphasize that there will be no glovebag sliding. One glovebag shall be used per section of pipe not to exceed 10-inch diameter. Sliding of bag shall not be permitted.

(19) With removed insulation in the bottom of the bag, twist the bag several times and tape it to keep the material in the bottom during removal of the glovebag from the pipe.

(20) Slip a six (6) mil. disposal bag over the glovebag (still attached to the pipe). Remove the tape and open the top of the glovebag and fold it down into the disposal bag.

(21) All surfaces in the work area shall be cleaned using disposable cloths wetted with amended water. These cloths shall be disposed of or rinsed thoroughly to eliminate visible accumulation of debris. Then, when these surfaces have been allowed to dry, all surfaces shall be cleaned again using a HEPA filtered vacuum.

(22) Place any contaminated articles, debris, etc. into the bag with the waste.

(23) Twist the top of the bag closed, fold this over, and seal with duct tape. Place this bag into a second six (6) mil. disposable bag, and seal as in the above manner. Label the bag with the appropriate warning label.

(24) Asbestos-containing material shall be disposed of as specified.

(25) Air sampling shall be conducted during glovebag removal to determine if undetected leakage occurred. Once the area has been found to be safe for re-entry by unprotected personnel, the barriers may be removed.

C. Protection of Existing Work to Remain

1. Perform work without damage or contamination of adjacent work. Where such work is damaged or contaminated as verified by the AC using visual inspection or sample analysis, it shall be restored to its original condition or decontaminated by the Contractor at no expense to the Authority as deemed appropriate by the AC. This includes inadvertent spill of dirt, dust, or debris in which it is reasonable to conclude that asbestos may exist. When these spills occur, stop work immediately. Then clean up the spill. When satisfactory visual inspection and air sampling results are obtained, work may proceed at the discretion of the AC.

D. Asbestos Control Area Requirements

1. Scaffolding

a. The use of scaffolding is required by the Contractor to access the asbestos-containing materials. All scaffolding shall be erected in accordance with OSHA standard 29 CFR 1926.451. No scaffold shall be erected, moved, dismantled, or altered except under the supervision of competent persons.

2. Negative Pressure Enclosure

a. Block and seal openings in the areas where the release of airborne asbestos fibers can be expected. Establish an asbestos negative pressure enclosure. Negative pressure enclosure development shall include protective covering of walls and ceilings with 2 layers of minimum 6-mil plastic sheet sealed with tape to prevent water or

other damage. Provide local exhaust system in the asbestos control area.

E. Removal Procedures

1. Wet asbestos material with a fine spray of amended water during removal, cutting, or other handling, so as to reduce the emission of airborne fibers. Remove material and immediately place in 6-mil plastic disposal bags. Remove asbestos containing material in a gradual manner, with continuous application of the amended water or wetting agent in such a manner that no asbestos material is disturbed prior to being adequately wetted. Where unusual circumstances prohibit the use of 6-mil plastic bags, submit an alternate proposal for containment of asbestos fibers to the AC for approval. Asbestos containing material shall be containerized while wet. At no time shall asbestos material be allowed to accumulate or become dry. Lower and otherwise handle asbestos containing material as indicated.

   For roofing materials, provide a drop cloth below work area. The drop cloth should be below work area to catch any debris generated during removal. Set up ladder or scaffolding if needed. Seal over a penetrations, air intakes or windows in the work area with polyethylene sheeting. Spray roofing material with amended water prior to start of removal. Maintain roofing material in a wet condition throughout removal. Do not cut, abrade or break roofing material. Start at top of removal area, remove nails, or cut nails with a flat sharp nail cutter. Pry up edge of roofing material until edges can be gripped by hand. Remove roofing material and immediately place in 6-mil plastic disposal bags. Remove asbestos containing material in a gradual manner, with continuous application of the amended water or wetting agent in such a manner that no asbestos material is disturbed prior to being adequately wetted. Where unusual circumstances prohibit the use of 6-mil plastic bags, submit an alternate proposal for containment of asbestos fibers to the AC for approval. Asbestos containing material shall be containerized while wet. At no time shall asbestos material be allowed to accumulate or become dry. Lower and otherwise handle asbestos containing material as indicated in 40 CFR 61-SUBPART M. Continue removing roofing material using this procedure. Clean up any debris or dust using HEPA vacuuming and wet wiping.

F. Air Sampling

1. Sampling of airborne concentrations of asbestos fibers shall be performed in accordance with 29 CFR 1926.1101, NJAC 5:23-8 and as specified herein. The QP shall perform sampling performed in accordance with 29 CFR 1926.1101. Sampling performed for environmental and quality

control reasons shall be performed by the AC. Unless otherwise specified, use NIOSH Method 7400 for sampling and analysis. The Authority may duplicate monitoring. If the air sampling results obtained by the Authority differ from those results obtained by the Contractor, the Authority will determine which results predominate.

a. Sampling Prior to Asbestos Work

1) Provide area air sampling and establish the baseline one day prior to the masking and sealing operations for each removal site. Establish the background by performing area sampling in similar but uncontaminated sites in the building.

b. Sampling During Asbestos Work

1) The QP shall provide personal sampling as indicated in 29 CFR 1926.1101 and governing regulations. At the same time the AC will provide area sampling close to the work area. In addition, provided the same type of work is being performed, the AC will provide area sampling once every work shift close to the work inside the work area and outside the work. If sampling outside the enclosure shows airborne levels have exceeded background or 0.01 fibers per cubic centimeter, whichever is greater, stop all work, and correct the condition(s) causing the increase. Where alternate methods are used, perform personal and area air sampling at locations and frequencies that will accurately characterize the evolving airborne asbestos levels.

G. Lock-Down

1. The Contractor shall request a pre-sealant inspection prior to removal of barriers and after pre-clearance clean up of gross contamination. The QP and AC shall conduct a visual inspection of all areas affected by the removal in accordance with ASTM E 1368 and NJAC 5:23-8. Inspect for any visible fibers. A post removal (lock-down) encapsulant shall then be spray applied to ceiling, walls, floors and other areas exposed in the removal area. The exposed area shall include but not be limited to plastic barriers, furnishings and articles to be discarded as well as dirty change room, air locks for bag removal and decontamination chambers.

H. Site Inspection

1. While performing asbestos engineering control work, the Contractor shall be subject to on-site inspection by the AC. If the work is found to be in

violation of this specification, the AC will issue a stop work order to be in effect immediately and until the violation is resolved. All related costs including standby time required to resolve the violation shall be at the Contractor's expense.

I. Final Clearance Inspection

1. The Contractor and AC will perform a complete visual inspection of the entire work area. Following final clearance air sampling, encapsulation, and air sample results below 0.01 fibers per cubic centimeter. If the final clearance inspection is not acceptable, the Contractor must remedy all deficiencies. ***All related costs to perform final clearance samples per N.J.A.C 5-16 shall be at the Contractor's expense and standby time required to resolve any violation/deficiencies shall be at the Contractor's expense.***

1. The AC shall issue Certificate of Completion after final inspection. The Certificate of Completion shall be issued if:

    1. All information is complete;
    2. Final inspection is approved;
    3. Final air monitoring levels as required by NJAC 5:23-8.21 or lower has been attained; and
    4. All requirements of this specification and NJAC 5:23-8 have been met.

3.3 CLEAN-UP AND DISPOSAL

A. Housekeeping

1. Essential parts of asbestos dust control are housekeeping and clean-up procedures. Maintain surfaces of the asbestos control area free of accumulations of asbestos fibers. Give meticulous attention to restricting the spread of dust and debris; keep waste from being distributed over the general area. Use HEPA filtered vacuum cleaners. DO NOT BLOW DOWN THE SPACE WITH COMPRESSED AIR. When asbestos removal is complete, all asbestos waste is removed from the work-site, final clean-up is completed, and the final clearance inspection is acceptable, the AC will attest that the area is safe before the signs can be removed. The AC will visually inspect all surfaces within the work area for residual material or accumulated dust or debris. The Contractor shall re-clean all areas showing dust or residual materials. If re-cleaning is required, air sample and establish an acceptable asbestos airborne concentration after re-cleaning. The AC must agree that the area is safe in writing before unrestricted entry will be permitted. The Authority shall have the option to perform monitoring to determine if the areas are safe before entry is permitted.

B. Title to Materials

1. All waste materials, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified in applicable New Jersey and Federal regulations and herein.

C. Disposal of Asbestos

1. Procedure for Disposal

a. Collect asbestos waste, asbestos contaminated water, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing which may produce airborne concentrations of asbestos fibers and place in sealed fiber-proof, waterproof, non-returnable containers (e.g. double plastic bags 6-mils thick, cartons, drums or cans). Wastes within the containers must be adequately wet in accordance with 40 CFR 61-SUBPART M and NJAC 5:23-8 and NJAC 7:26. Affix a warning and Department of Transportation (DOT) label to each container including the bags or use at least 6-mils thick bags with the approved warnings and DOT labeling preprinted on the bag. The name of the waste generator and the location at which the waste was generated shall be clearly indicated on the outside of each container. Prevent contamination of the transport vehicle (especially if the transport vehicle is a rented truck likely to be used in the future for non-asbestos purposes). These precautions include lining the vehicle cargo area with 6-mil plastic sheeting (similar to work area enclosure) and thorough cleaning of the cargo area after transport and unloading of asbestos debris is complete. Dispose of waste asbestos material at an Environmental Protection Agency (EPA) or State-approved asbestos landfill off Authority property. For temporary storage, store sealed impermeable bags in asbestos waste drums or skids. The Authority or AC will assign an area for interim storage of asbestos waste-containing drums or skids. This area must be lined with 6-mil plastic sheeting and placed under negative pressure for the duration of the interim storage. Procedure for hauling and disposal shall comply with 40 CFR 61-SUBPART M, New Jersey and other applicable standards. Sealed plastic bags may be dumped from drums into the burial site unless the bags have been broken or damaged. Damaged bags shall remain in the drum and the entire contaminated drum shall be buried. Uncontaminated drums may be recycled. Workers unloading the sealed drums shall wear appropriate respirators and personal protective equipment when handling asbestos materials at the disposal site.

2. Asbestos Disposal Quantity Report

a. Direct the QP to record and report, to the AC, the amount of asbestos containing material removed and released for disposal. Deliver the report for the previous day at the beginning of each day shift with amounts of material removed during the previous day reported in linear meters or square meters (linear feet or square feet) as described initially in this specification and in cubic meters (feet) for the amount of asbestos containing material released for disposal Allow the AC to inspect, record and report the amount of asbestos containing material removed and released for disposal on a daily basis.

END OF SECTION